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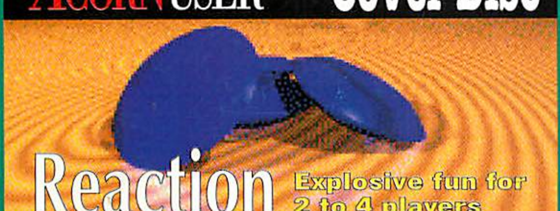
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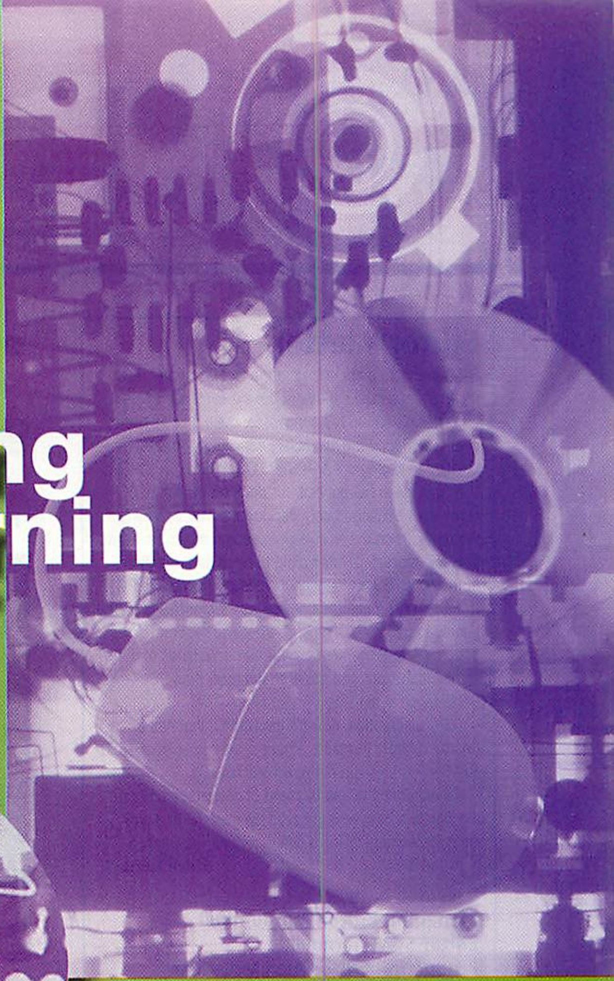
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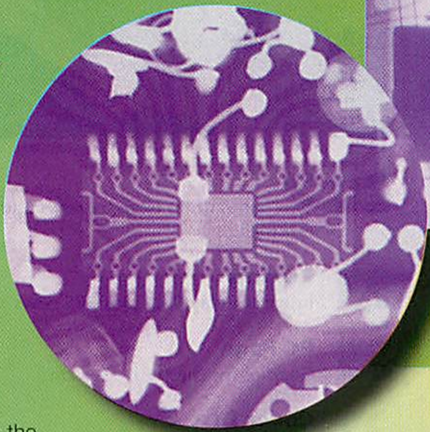
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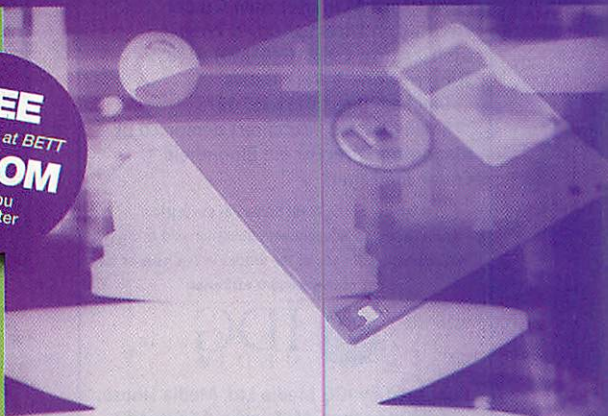


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Editor's letter

Bill Gates is running scared of the Net Computer. That might seem a rash statement but the evidence bears it out. Oracle had the NC concept for quite a while but eventually found the necessary software/hardware combination to implement it — RISC OS/ARM.

At this stage BG scoffed, his book on the future of computers envisaged only desktop machines running Windows. Then the NC was implemented and the Press became interested. Attempting to head off the switch from Wintel, BG announced the Simply Interactive PC (SIPC). This propaganda device was supposed to make people forget the NC. It didn't work and big companies became very interested in these new machines that are so much cheaper and easier to maintain than PCs — so BG is trying again.

SIPC is forgotten, now it's the NetPC, that has a (mere) 100MHz Pentium, a hard drive and at least 16Mb RAM — and this is a cut-down machine.

It's rather sad to see this kind of desperation, but it's the sign of a man who believed his own PR and now finds the world is taking a different road, leaving him high and dry.

Steve Turnbull

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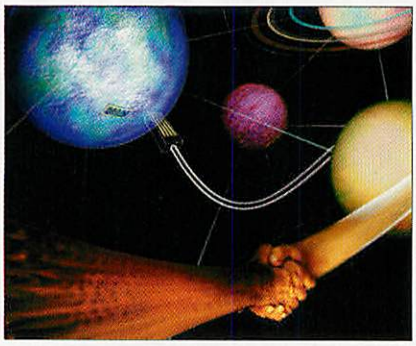
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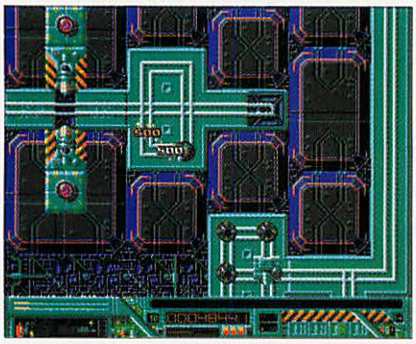
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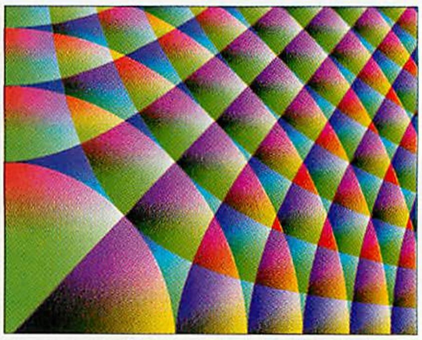
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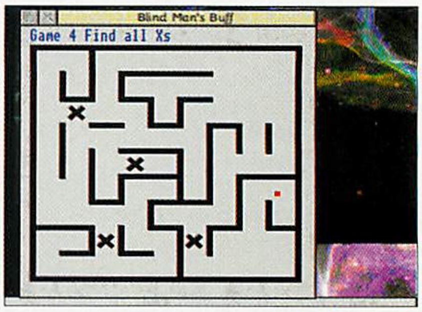
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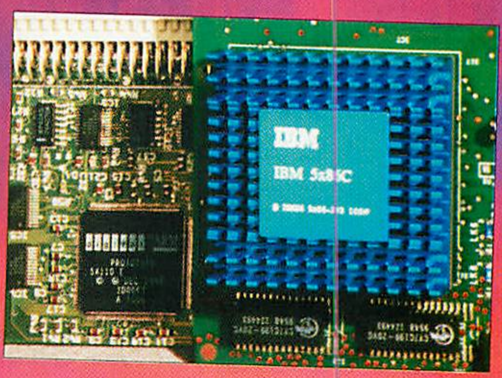


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Next month in Acorn User



On the cover of next month's issue comes Xenon II, the superb arcade shoot'em-up for all Acorn RISC OS machines — including 16-bit sound and StrongARM. Plus inside we have reviews of the new Psion portables, a report on Acorn in New Zealand from our roving world reporter and the final part of the arcade game builder series.

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Risc PC x86 Card 5x86	Acorn	467.65	£398
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Risc PC x86 Card DX4-100	Acorn	£350.15	£298
SCSI II Interface for Risc PC	Cumana	£193.88	£165
SIMM 4 Mb 32 bit		41.13	£35
SIMM 8 Mb 32 bit		57.58	£49
SIMM 16 Mb 32 bit		104.58	£89
SIMM 32 Mb 32 bit		199.75	£170
StrongARM Processor upgrade	Acorn	291.40	£248

Acorn portables

A-Link for Pocket Book	Acorn	59.93	£51
Flash Disc 512K for Pocket Book	Acorn	£92.83	£79
Flash Disc 1 Mb for Pocket Book	Acorn	£119.85	£102
Mains Adaptor for Pocket Book	Acorn	£18.80	£16
Parallel Link for Pocket Book	Acorn	£32.90	£28
Pocket Book II 256K	Acorn	£238.53	£203
Pocket Book II 1MB	Acorn	316.08	£269

Other hardware

A305/310/440 RISC OS 3 Carrier Board	IFEL	£22.33	£19
A7000 4M HD540	Acorn	1056.33	£899
A7000 4M HD540 4x CD	Acorn	1173.83	£999
Auto-Scan 1438 Monitor (14") AKF 50 alternative	Microvitec	£299.63	£255
Auto-Scan 1450 Monitor (14") AKF 60 alternative	Microvitec	£229.13	£195
Backplane, 4-slot 4-layer with fan	IFEL	£64.63	£55
Casio QV-10 Camera	Acorn	408.90	£348
ColorMobile Direct Scanner for Windows	Primax	£175.08	£149
ColorMobile Office Scanner for Windows	Primax	£233.83	£199
DeskTV Entry level	Yellowstone	£192.70	£164
DeskTV Standard (with Tuner)	Yellowstone	£232.65	£198
DMI 30	Audio	£106.93	£91
DMI 50 - S	Audio	£192.70	£164
Ergo Keyboard	Castle	£115.15	£98
Ethernet Interface, A400 10base2+T Access+	Atomwide	£116.33	£99
Fan Kit for A300 / A400 Series	ICS	£17.63	£15
GamesPad Dual	GamesW	£35.25	£30
GamesPad Pro Dual	GamesW	£39.95	£34
GT-5000 A4 Colour Flatbed Scanner (parallel port)	Epson	£410.08	£349
iTV	Irlam	£197.40	£168
Lambda16	Irlam	£115.15	£98
Midi Max	CC	£79.90	£68
Midi Port Standard Podule for A5000, A7000, Risc PC	Acorn	63.45	£54
Movie Magic	CC	£232.65	£198
Mozart Digital Audio	Yellowstone	£69.33	£59
PD Cartridge, 650 Mb Rewritable	Panasonic	£44.65	£38
Power Switch	GamesW	£19.98	£17
PowerWAVE 50XG	Audio	£292.58	£249
Printer Port Sampler	VTI	£57.58	£49
ScanLight 256	CC	£150.40	£128
ScanLight 256 for A3000/3010/3020/A4000	CC	£162.15	£138
ScanLight Video 256 A310/400/5000/Risc PC	CC	£220.90	£188
ScanLight Video 256 A3000/A4000	CC	£220.90	£188
Sound Force 1 Multimedia PC Speaker System	QuickShot	£39.95	£34
Sportster Vi 14.4	US Robotics	£112.80	£96
Sportster Vi 28.8	USR	£179.78	£153
Tele-Card	XOB	177.43	£151
Tele-Card + Teletext-Turbo	XOB	420.65	£358
TV Tuner with Teletext	CC	£173.90	£148
User Port Analogue / MIDI for A3000 Series and A4000)	Acorn	68.15	£58
User Port Analogue / MIDI for A5000, Risc PC	Acorn	98.70	£84
Vision 24 A3000/3010/3020/4000 internal	HCCS	102.23	£87
Vision 24 A5000/400/300/Risc PC	HCCS	102.23	£87
Vision 24 508 line A3000/3010/3020/4000 internal	HCCS	136.30	£116
Vision 24 508 line A5000/400/300/Risc PC	HCCS	136.30	£116
Vision Master Colour Monitor 15"	iiyama	295.00	£295
Vision Master Colour Monitor 17"	iiyama	545.00	£545
Vision Master Colour Monitor 17" Pro	iiyama	645.00	£645
Whisper Fan Quietener (for A300/A400 Series only)	ICS	£17.63	£15
Wizzo5 for A5000	ICS	£45.83	£39
Zip Disc 100 Mb	VTI	16.45	£14
Zip Pack (drive + disc)	VTI	173.90	£148

Memory

A305/310/440 1 - 4 Mb	IFEL	£138.65	£118
A3000 1 - 2 Mb, Upgradable	IFEL	£61.10	£52
A3000 1 - 4 Mb	IFEL	99.88	£85
A3010 1 - 2 Mb	IFEL	£44.65	£38

ICS

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A3010 4 Mb	IFEL	92.83	£79
A3020 / A4000 2 - 4 Mb	IFEL	£86.95	£74
A5000 2 - 4 Mb	IFEL	£76.38	£65

Printers

BJ-30 Bubble Jet Printer (Black/White)	Canon	£162.15	£138
BJC-70 Colour Bubble Jet Printer (Black/White)	Canon	£210.33	£179
BJC-210 Colour Bubble Jet Printer	Canon	£175.08	£149
BJC-620 Colour Bubble Jet Printer	Canon	381.88	**£325**
BJC-6xx Ink Cartridge, Black High Capacity	Canon	14.10	£12
BJC-6xx Ink Cartridge, Cyan	Canon	11.75	£10
BJC-6xx Ink Cartridge, Magenta	Canon	11.75	£10
BJC-6xx Ink Cartridge, Yellow	Canon	11.75	£10
BJC-4100 Colour Bubble Jet Printer	Canon	£233.83	£199
BJC-4550 Colour Bubble Jet Printer	Canon	363.08	**£309**
BJC-4xxx Cartridge, Colour	Canon	£47.00	£40
BJC-4xxx Cartridge, Black	Canon	£30.55	£26
BJC-4xxx Ink Tank, Black	Canon	£10.58	£9
BJC-4xxx Ink Tank, Colour	Canon	£17.63	£15
DeskJet 340	HP	£199.75	£170
DeskJet 500 Series / Deskwriter Ink Cartridge, Black high capacity	HP	£24.68	£21
DeskJet 500 Series Tri-chamber Colour Ink Cartridge	HP	£24.68	£21
DeskJet 660C	HP	£246.75	£210
DeskJet 690C	HP	264.38	£225
DeskJet 600 Series Ink Cartridge, Black	HP	24.68	£21
DeskJet 600 Series Ink Cartridge, Colour	HP	27.03	£23
DeskJet 870Cxi	HP	£440.63	£375
EP-L Toner Cartridge for LBP-4	Canon	£69.33	£59
EP-S II Toner Cartridge for LBP-8	Canon	£81.08	£69
LaserJet 5L	HP	393.63	£335
Stylus 200	Epson	148.05	**£126**
Stylus 500	Epson	287.88	£245
Stylus Color 200	Epson	182.13	**£155**

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news

Sun/IBM compete with Acorn/Oracle NC

IT WAS RATHER fitting that Sun Microsystems' world-wide satellite-linked launch of its JavaStation Network Computer (NC) range included a down-link to the island of Java in Indonesia. The NC movement's holy grail is the platform-independent Java architecture, first proposed by Sun less than 18 months ago. IBM has 'Java-enabled' its OS/2 Warp operating system to a common or garden PC into a NC-style device. The two initiatives represent lively competition for Acorn's plans in the NC arena.

Scott McNealy, Sun Microsystems' chief executive officer, took to the stage to crack some carefully worded jokes - mostly at Microsoft and Intel's expense. A spoof version of the legendary Apple TV ad from 1984, which originally used the George Orwell 1984 novel scenario to attack IBM's dominance of the computer market, now featured a Bill Gates look-alike as public enemy number one.

If you needed convincing as to the viability of the NC revolutions, Sun delivered its message with uncanny logic - reminding us that there are over a hundred million PCs out there but two thirds of the world's population has never used a telephone. That the PC is a bloated architecture which people are forced to use through circumstance rather than choice. It's expensive - possibly running up $10,000 per annum administration costs according to analyst calculations, let alone the high initial purchase price. A PC is crammed with delicate and expensive technology, which McNealy likened to the need of a telephone exchange on your desktop simply to make a phone call.

While Sun was rubbishing the PC, it was careful not to reject its place in the grand scheme of things. Telling the world that nobody wants PCs – indeed Risc PCs – with their intrinsic versatility and richness would be very naive. However, more affordable NCs would eventually out-number their PC cousins by a large ratio, at least that's the hope.



To hit home its point, Sun revealed that its JavaStation 'thin client' NCs will sell for £519 + VAT without a monitor, or £699 + VAT with a standard SVGA 14 inch monitor. You can't get an entry-level premium brand PC for anything near those prices. Calculated cost of ownership, including technical support, administration, etc., is estimated to be just one third that of a comparable PC.

Matching Sun's rhetoric against the PC, Microsoft and Bill Gates have been just as insistent that the PC is the way forward, but Gates has now signalled a change of strategy and has cobbled together a proposal for a Net PC. Basically, it's a slimmed down Windows operating system mated to a slimmed down PC hardware platform. Some say Gates is running scared of the NC revolution.

Sun is not interested in the cut-throat cut-price end of the market and rule out marketing to the consumer for some time. In any case, a fundamental requirement for NCs is a fast network connection – a modem won't be acceptable to consumers. However, if Sun can build and sell a superb-looking JavaStation NC for the rich corporate market with a price tag of £519, someone else will eventually be able to make them, in a less attractive box perhaps, for approaching half the price. Acorn is doing just that.

Graftek introduces updated Tabby

SINCE 1993 some 10,000 Tabby graphics tablets have been produced in the UK by Micrograf International.

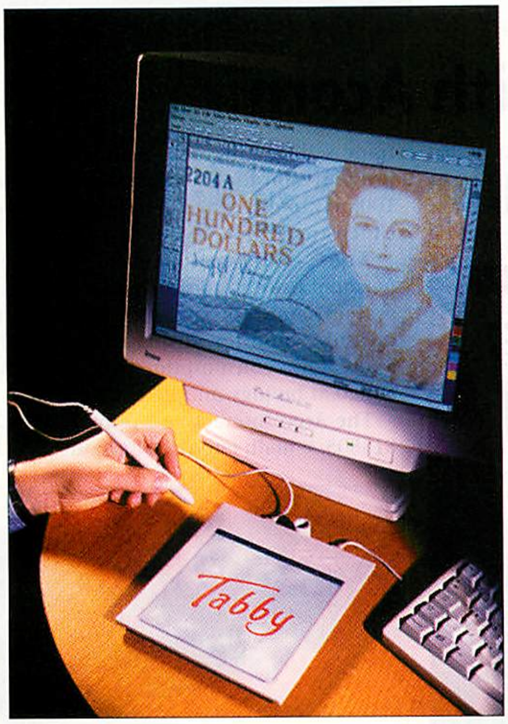
Tabby tablets have been very popular among Acorn users, especially for graphical input as well as pen-operated desktop navigation and control.

The diminutive tablet (176 x 165 mm) has a resolution of 2048 x 2048 with an accuracy of +/- 1 pixel.

The latest version of the Tabby has revised ergonomics and a built-in microprocessor to improve performance.

Its recommended price is £69.95 including VAT.

Distributor Graftek, tel: (01932) 248222.



Acorn World Risc PC revelations

ART'S PETER BONDAR has been talking about things to come Risc PC-wise. At Acorn World he wowed the fans with talk of 300MHz multiple processor StrongARM next-generation Risc PCs mated to vast quantities of VRAM which would satisfy the requirements if the most ardent image processing guru.

The 300MHz StrongARM talk was a bit of a surprise for us here at AU as we had been told by Peter Bondar that it was unlikely that we would see a StrongARM much faster than 230MHz for quite a while, if at all. Still, news like that is very welcome.

Another sign of the times is that Acorn will almost certainly offer motherboard upgrades for existing Risc PC users instead of forcing them to buy complete new systems, which many potential buyers wouldn't be able to afford. Bondar was also quoted in the national press as saying that Acorn is in better shape than it has been for a long time and that they were now undertaking many ambitious projects and upping the R&D spend correspondingly.

Acorn World optimism

EPS EVENTS, which organised this year's Acorn World Show, has reported that the whole event was an unqualified success, making a profit and attracting a good turnout. Despite the fact that this year's event didn't coincide with a school half-term holiday, attendance was broadly comparable with last year, though no definitive figures were available at press time.

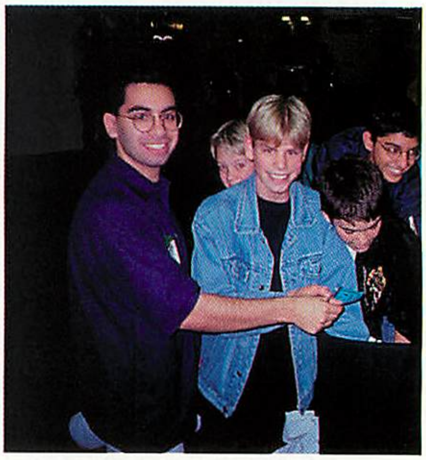
Fewer children were at this year's show and EPS suggest that the overall calibre of attendees was higher, with more teachers attending on the Friday 'education day'. The education seminar event was very successful, with over 350 delegates.

Exhibitors and visitors seem to have been pleased by the change of venue from Wembley to Olympia 2, with more space being a major advantage.

Dalriada Data Technology was especially happy, reporting back to EPS that they had done six months worth of business over the three days of the event.

Computer Concepts was besieged by customers for software upgrades for StrongARM compatibility. There were mixed opinions about the PC destruction derby on the second floor, but at least it did reflect new-found optimism for Acorn prospects.

Next year's Acorn World will take place between October 31 and November 2 at Olympia 2 once more. EPS Events Ltd, tel: 0701 0709 901, fax: 0701 0709 902.



That Risc PC under lock and key

IMAGINE YOUR news reporter's surprise when he wandered into WH Smiths at Charing Cross Station in London a week before Acorn World. I picked up a copy of *Byte* magazine, the Rolls Royce of computer technology publications from the US. On the cover was a red card with a little key on it. Looks interesting, I thought.

Then it struck me – this was an Acorn Risc PC promotion! Apparently the brain child of Chris Cox at ART, all copies of *Byte* distributed across Europe featured the promotion, which invited the reader to bring his or her key to the Acorn World show and try their luck in unlocking the door to a brand new StrongARM Risc PC. Unfortunately, mine didn't work. In fact nobody successfully claimed the prize – a shame – but what a way to tell the world that the Risc PC is back with a vengeance.

Digital Magic

ANOTHER new software house supporting the Acorn platform has started business based in The Hague in the Netherlands. Digital Magic says its primary object is to fill a gap in the Acorn market for professional MIDI music applications such as sequencers, MIDI instrument editors, sample editors and MIDI dump archivers.

Its first release will be DMStudio (a pre-release working name), a MIDI sequencer currently under development. Digital Magic describes it as a high quality MIDI sequencing and composing system aimed at the home and professional market. Its spec includes up to 64 tracks, an intuitive drag and drop user interface, a spreadsheet-style arranger managing 20-track parameters and 20 local effects parameters per pattern, plus multiple editors per score and support for variable pressure controllers plus much more.

For further details, write to Digital Magic, Linnaeusstraat 294, 2522 HA, The Hague, Netherlands

Argo Zips up deal with Acorn

AS WE HINTED in our last issue, Argo Interactive and Acorn have signed a deal which involves Argo producing driver support to enable Iomega's best-selling parallel port Zip Drive products to be used with Acorn computers. Argo did a roaring trade selling Zip packages to visitors at Acorn World, but the prime reason for the deal with Acorn was for the NC cause. The 100Mb Zip drives will be offered as a portable storage option for NC customers.



Argo's other major news from the show was HeartBeat, a personal health monitoring system to check out your heart. The system is an electrocardiograph which also allows users to measure, monitor, display and record body heat rate changes and calorie consumption. The £99 + VAT package is primarily aimed at biology and PE teachers.

The Argo Interactive Group, tel: (01243) 815815, fax: (01243) 815805, e-mail: enquiries@argonet.co.uk



Left: Monitor your heartbeat

Right: Argo Zip Drives are a portable storage option for NC users

news

Apple's StrongARM Newton

AS WIDELY speculated, Apple has announced a StrongARM-powered Newton personal digital assistant (PDA). It's called the MessagePad 2000 and runs on a 160MHz version of the blistering StrongARM chip fabricated by Digital Semiconductor. A surprise announcement alongside the MessagePad 2000 was that of the eMate 300, also based on its Newton architecture and destined for high-tech class-rooms.

The MessagePad 2000 is a turbo-charged version of Apple's established MessagePad family which boasts a ten times performance improvement over the old versions' 20MHz ARM610 processors — courtesy of StrongARM RISC power. All that number crunching ability is needed to improve the performance of the Newton handwriting recognition engine, identified as a major disappointment in earlier models.

The MessagePad 2000, which is both smaller, lighter and yet has a larger screen than its predecessors, will include a fully-featured Web browser and Internet e-mail client. A microphone is built in and efficient sound compression means that the MessagePad 2000 can store over an hour's worth of audio. It is also designed with GSM wireless data connections in mind, though no built in phone is featured.

A pair of PCMCIA expansion slots are provided for GSM data cards, conventional modem cards or extra storage. It's likely voice attachments to messages will be featured. Apple hints that it is excited at the prospect of voice recognition capabilities to supplement handwriting recognition, though no software to perform this function was demonstrated.

The MessagePad 2000 is set to ship in February next year. However, its recommended selling price of £700 takes it well outside the Psion Series 3/Acorn Pocket Book domain. Psion is rumoured to be working on a PDA with a remarkably similar specification to the MessagePad 2000 – with StrongARM power, voice recognition plus voice and GSM cellular connectivity options. Hopefully it will be more affordable than the MessagePad 2000.

Apple's other Newton baby, the eMate 300, eschews costlier StrongARM power for an ARM710. Why Apple didn't opt for the unified ARM 7500, as featured in the Acorn 7000 and the Acorn/Oracle NC, is a curiosity.

The Newton eMate 300 is a ruggedised Newton device in sub-notebook form designed specifically for the schools market. Design goals involved producing a schools computer which could withstand class-room abuse and yet include a conventional built-in keyboard – a Newton first – and which could be managed and maintained easily by teaching staff.



The case has curved corners to spread out impact forces should the unit be dropped. A large carry-handle is built into the clam-shell configuration of the case. Once opened, a note-book keyboard is revealed along with a monochrome LCD touch-sensitive display. The display can be opened up to lie flat on a desktop to ease pen-sensitive operation, as in more typical Newtons.

At the end of a school day, a class-room's eMate 300s can be gathered up and stacked in a dedicated storage and recharging station, ready for the next school day. Apple also believe eMate 300s will popular for use in the evening at home by pupils, with the teacher's permission.

Roger Broadie, an educational computing consultant who has worked closely with Acorn and Xemplar, the new Acorn/Apple joint education venture, is very enthusiastic about the eMate 300. He revealed that Xemplar would be evaluating the marketability of the eMate 300 during the first half of 1997.

He denied that it would impact on the Acorn Pocket Book's pioneering role in UK schools, suggesting the two were complementary. Pricing and availability will be set after the evaluation period has been completed.

Newton helpline (UK), tel: 0800 639866, Web: http://www.infor.apple.com/newton.

PocketBook printer

ONE OF THE smallest and lightest near laser-quality printers in the world is Citizen's PN60 model and the joint Acorn/Apple education company, Xemplar, has adopted the PN60 as a portable printing solution for the Acorn PocketBook computer.

Weighing just over a pound and measuring 25.4 x 5.05 x 4.7 cm, it is hardly wider than a sheet of A4 paper and will easily fit into most briefcases. The printer uses a thermal print mechanism and has a colour option. Battery or mains power can be used. Ordinary paper, labels and overhead transparencies are all catered for by the PN60.

Product manager, Emma Barnett, explained: "The PN60 pocket printer is ideal for field trips allowing students and teachers the flexibility to produce reports and data as hard copies, learning wherever they might be."

Citizen has produced two new PocketBook connectivity kits for the PN60 which will be marketed by Xemplar. The printers are available from variety of High Street electronic retailers. Xemplar Education, tel: (01223) 724262, fax: (01223) 724300, e-mail: info@xemplar.co.uk.

StrongARM or A710 ... or both?

MCS OF Germany has released a problem solver for people who want the power of the StrongARM without losing the products that aren't compatible. The ARM_Switcher is a hardware product that allows you to plug bother processors into your machine simultaneously.

The current version has a manual switch but later models will be software switchable and the upgrade will be free if you want to buy now. Not only does it give you access to both products but the card also has a third socket for additional plug-ins coming soon.

The card costs just £119 and is available from MCS, Baroper Bahnhof Str. 55, 44225 Dortmund, Germany Tel: 0049 231 759283 Fax: 0049 231 750455. E-mail: mcssales@knipp.de and web: http://www.acebace.de/mcs.html.

StrongARM tops Java speed trials

DIGITAL EQUIPMENT Corporation has announced that the StrongARM SA-110 microprocessor has topped the benchmark ratings for the CaffeineMark 2.01 interpreted Java applet performance test. The results were achieved using, what Digital describes as a prototype Internet terminal – a reference hardware design for the StrongARM SA-110 chip that was used to port the JavaOS operating system to the StrongARM architecture.

The CaffeineMark benchmark applet was produced by Pendragon Software's. It rates the performance of Java applets by specific hardware-software configurations. Prototypes used for the testing were fitted with 233MHz and 185MHz versions of StrongARM running JavaOS and the Hot Java browser.

Results produced indicated interpreted CaffeineMark scores more than twice as high as a Silicon Graphics Indigo Extreme 2 workstation (MIPS R4400-250MHz CPU, Irix 5.3 OS), a Sun Ultra 170 workstation (UltraSPARC-167MHz CPU, Solaris 2.5 OS), and an AT-compatible Pentium Pro-200MHz PC (Linux OS), all running Netscape Navigator 2.0 or 3.0b5a.

"The CaffieneMark scores demonstrate that the StrongARM SA-110 interprets Java applets extremely fast"

To put these figures into perspective, Sun's impressive new JavaStation NC (see separate story) makes do with a relatively lowly 100MHz UltraSPARC CPU. Sun's Java-optimised Pico processors are not yet in production, but will offer more realistic competition to StrongARM eventually.

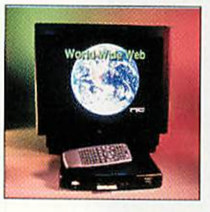
"The CaffeineMark scores demonstrate that the StrongARM SA-110 interprets Java applets extremely fast and is well suited for low-cost Java appliances with small memory footprints," said Leo Joseph, Internet appliance marketing manager for Digital Semiconductor.

He added: "We are also working on a JIT (Just In Time) compiler for StrongARM that will give a performance improvement of ten times for the CaffeineMark benchmark. At sub-watt power levels and prices below $50, StrongARM chips deliver the industry's leading MIPS-per-dollar and MIPS-per-watt for embedded applications." That familiar ARM slogan rings as true as ever.

The CaffeineMark website is at: http://www.webfayre.com/pendragon/cm2/index.html.

New Acorn NC models revealed





JUST AS ACORN World exhibitors were packing up for another year at Olympia in London, the organisers of Oracle Open World '96 in San Francisco were making last minute preparations for their event which started on November 5. Guy Fawkes night may not be celebrated across the pond, but Acorn was certainly letting off metaphorical fireworks with the announcement at the Open World event with the announcement of several new NC devices, including, the StrongARM-powered Office NC, the Set-top Box NC (STB NC), the ExecPhone NC, and the NC TV. Acorn also announced the immediate commercial availability of its basic Acorn NC.

The Office NC and STB NC are brand new models being prepared as Reference Designs from Network Computer, Inc. (NCI).

The ExecPhone NC and NC TV are working prototypes designed to demonstrate new concepts in network computing. Acorn has been developing and licensing technology to NCI since January. According to Acorn, many of the network computers on display NCI's pavilion at OpenWorld were based on Acorn Reference Designs.

"As one of our premier partners, Acorn is developing new and innovative NC prototypes," said Jerry Baker,, President of Network Computer, Inc. "They've been instrumental in providing cutting edge technology and know-how to the industry that has helped turn the NC into reality."

The STB-NC, or Set-Top Box NC is capable of displaying quality real-time video from an MPEG 2 data stream. This NC provides an ideal solution for interactive TV applications when attached to a suitable network structure. The ExecPhone couples NC technology with the normal office desktop phone.

The NC TV prototype shows how NC technology can be applied to the field of consumer electronics. By including the NC design within an existing consumer product, the cost of providing NC technology to the home is reduced even further. Users can explore the web from the comfort of their hotel or living room using a remote handset which includes a full alphanumeric keyset and special function keys designed for web use. Personal data and e-mail can be taken from the office, to the home or a hotel, simply by carrying the obligatory personal NC SmartCard.

As well as announcing its immediate availability, Acorn also announced that the Acorn NC has been coming off the production lines since August, ahead of schedule. For corporations ordering in volume, the Acorn NC can be priced below $400, around half the price of Sun's recently launched JavaStation NC.

RISC OS hits Korea

ACORN HAS signed an agreement with The Electronics and Telecommunications Research Institute of Korea, ETRI, sponsored by the Korean Ministry of Technology for the development of a range of Internet-enabled multimedia products.

Korea is in the middle of a drive to become one of the leaders in Information Technology and ETRI's mission is to generate new intellectual property for Korea.

Dr Cheehang Park, vice president of ETRI's computer division, commented: "Acorn is the world's leading developer of RISC technologies with a long history of innovation. As one of the leaders in the interactive multimedia market place, Acorn was the ideal choice for us to work with."

Peter Bondar, director of Acorn Risc Technologies, added: "This agreement represents Acorn's entrance into the Korean market and moreover it is a major landmark for Acorn's business strategy for technology licensing. Given the importance of Korean companies on the world stage, the partnership with ETRI gives our technology a pre-eminent position in one of our key target markets. In fact this could not have come at a better time, Acorn will be in at the start of the Korean Government's trail-blazing initiative to be at the forefront of internet technology thanks to its work with ETRI."

Pure speculation it is, but with Olivetti's continuing financial woes and its steady loosening grip on the Acorn Computer Group, added to Korean companies' aggressive expansion in Europe, could we one day be faced with a Korean take-over bid for Acorn? It's just speculation of course!

Acorn

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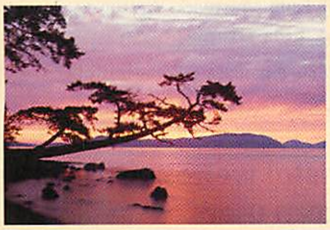

Scanflat II 600 & 800

The single pass high quality Scanflat II range of A4 flatbed scanners is a new and improved version of the highly successful Scanflat series. With a new compact footprint to save space, and improved scanning speeds, the Scanflat II provides both quality and ease of use for the busy office or classroom. Available now in 600dpi and 800dpi versions.

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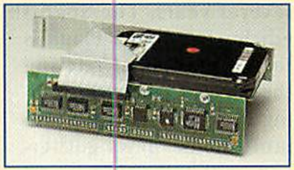
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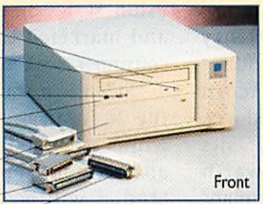
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Acorn debuts NewsPAD

ACORN RISC Technologies, introduced its NewsPAD tablet computer to the public at Acorn World. Acorn suggests devices like the EC-sponsored OMI-NewsPAD portable "multimedia viewer" will eventually replace inky and cumbersome conventional newsprint in the not too distant future.

The A4 form factor NewsPAD houses a large, high-resolution colour SVGA active matrix LCD panel. A touch panel overlaid on the display controls the system and the user can personalise the content received as if published uniquely for that individual. If that sounds futuristic, customised news feeds concentrating on the user's preferred news topics, are already being offered to consumers on the Internet and have been available to business users – at a price – for several years. The Spanish publishing house Ediciones Primera Plana is in the process of trialing the concept and spearheading its long-term drive into multimedia news gathering, distribution and feedback.

NewsPAD is capable of displaying video and audio, colour still images, infographics and animated information sequences as well as the more traditional newspaper text and graphics. Also included is provision for an integral microphone and compact colour motion video camera to be built in. Acorn predicts the day when the user won't just be reading the news but, over a videophone link option, will possibly be making the news using the same NewsPAD-like device.

Tim Caspell of Acorn Risc Technologies said, "We have taken steps along the road which will change the lives of many hundreds of thousands of people and make an impact on millions of others in the next 25 years. This is because devices such as the NewsPAD will affect the entire time-dependent print media such as magazines and newspapers, and could make them obsolete in years to come.

"This change is unlike any other in the last 100 years to have affected the paper-based technology process. The consumer will have ultimate flexibility and will be able to access information as and when they require it. The relationship between the information supplier and the reader will be turned on its head."



Logically, utopian thoughts like the above will come true sooner or later. A word of caution, though – look what they said about the paperless office; computers have actually generated several times more business for paper producers. Newspaper executives aren't yet losing sleep over the portable computer revolution.

Acorn's reaction to Psion's palmtops

WITH THE RECENT arrival of Psion's attractive new Siena and Series 3c pocket computers, *Acorn User* contacted Acorn's Henry Howarth, who is the product manager for the Acorn PocketBook family of products, which are based on Psion's Series 3 models. We asked Howarth whether or not Acorn had plans to adopt Psion's latest technologies under the Pocket Book brand.

According to Howarth: "Xemplar plan to add new PocketBook products to the range early in 1997. These will be based on the Psion 3c product and will incorporate a range of modifications for educational use.

"Psion have recently announced the Series 3c and a smaller organiser called Siena. Like the Psion 3a, which has not been discontinued and will still be available for some time, the Psion Series 3c is designed for and marketed to business and consumer markets.

"Siena is a smaller version of the 3c in an organiser format, without the ability to add SSDs and without sound capability. Studies will be undertaken to evaluate the usefulness of this style of product in schools but there are no plans at present for Xemplar to produce their own version of Siena.

"Xemplar continue to work in partnership with Psion to make the most appropriate palm top technologies available to schools. The new PocketBook products will be enhanced versions of the popular PocketBook series, making use of the new features of the Psion 3c and adding additional applications and features of value to students and teachers.

"To ensure continuity the PocketBook II will still be available to schools, even after the new versions are available, so can still be purchased in confidence as the most appropriate palmtop for school use."

Howarth was not 100 per cent correct when he commented that Siena can't be used with SSD cartridges – an external SSD drive is listed as an accessory. With affordability a key concern in schools, it would be surprising if the cheaper Siena did not find a home in the Pocket Book fold. Hopefully the affordability of the Siena would expand the Pocket Book appeal without compromising the marketability of the more expensive Series 3-based models.

For enquiries about Pocket Book products, e-mail: pocket@xemplar.co.uk.

ARM Club on show

On Saturday December 7 the ARM Club are holding an Open Day at the National Motorcycle Museum, Coventry Road, Bickenhill, Solihull, West Midland opposite the NEC.

The show will feature many of the big names in the Acorn market as well as some of the smaller ones. Doors open at 10am and admission is just £1 (members half price) and under 16s go in free.

On the move...

Sincronia Soluzioni Multimediali, creator of TopModel, has moved to Via Bastone 35, 10090 Rosta (TO), Italy. Tel/fax: +39-11-9540540 and e-mail: sincro@inrete.it

IMS moves

Creator of RISC OS readers for PC CD-ROMs, Innovative Media Solutions, has moved. The company can be contacted at Box Bush Farm, Westwick, Weston-s-mare, BS24 7TF. Tel: (01934) 522880, e-mail: sales@ims-bristol.co.uk

Bristol welcomes Acorn users

The Bristol Acorn Risc User Group is a group for all users of Acorn 32-bit computers and RISC OS operating systems, who live within reach of North Bristol. Meetings are held on the last Wednesday of the month in the Long Room at the Burden Neurological Institute, Stoke Lane, Bristol.

The group has regular speakers from the Acorn world as well as mutual help sessions. The annual subscription is £7 and new members are always welcome.

Contact: Jeremy Brown, tel: 0117-968 2664 or e-mail on jeremyb@argonet.co.uk, WWW: http://emrs.chm.bris.ac.uk/ARUG/

RISC User

is entering its 10th volume

If you are not already a subscriber to the leading Acorn subscription magazine, here are 10 examples of what you have missed* in volume 9 of *RISC User*:



Making the News
Exclusive story of Acorn Risc Technologies' *NewsPAD*, by the head of the project

Acorn's *Timecode* software
A detailed explanation by the Acorn programmer who wrote *Timecode*

Something to Sing About
Details of the CHRP (PPCRP) hardware platform, by an Acorn engineer

The Vision of ART
All about the future of Acorn Risc Technologies from ART's head, Peter Bondar

VIP Interviews
David Lee (Acorn), Peter Bondar (ART), Brendan O'Sullivan (Xemplar) and others

What's Cooking?
Future developments at Acorn Online Media, ANT, ARM, IMS and others

Practical advice
Techniques for desktop publishing, graphics design and more

In-depth reviews
Expert coverage of the latest software and hardware, by experienced writers

Programming features
3D animation in Basic; floating point in Assembler; type-in listings and more

Regular features
Articles on the Internet, education, programming (Basic, C/C++, ARM, Wimp, Toolbox) and others

Recent comments from readers

"I have read every issue of *RISC User* ... They really are exceptionally good, particularly the more recent issues." *—Alexander Singleton, computer journalist*

"Another good issue of *RISC User*. I hate to say this, but I think [*Archive*] readers ought to be subscribing to both *RISC User* and *Archive*!" *—Paul Beverley, Editor, Archive magazine*



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StrongARM one month on...

I am in no doubt that, by the time of reading, most of you will have already seen StrongARM working either in their own machines or in others. I plugged in my StrongARM approximately one month ago and from a graphics and DTP angle have been very pleased with the effect. Sometimes amazed.

All the hertz, dryhstones and mips for StrongARM were published ages ago, but the benefits can only be realised by testing the chip *in-vivo*. After several weeks of trial and some tribulation, I have arrived at conclusions both good and bad. Tradition dictates that bad news be told first.

The main criticism with StrongARM and RISC OS 3.7 was compatibility. I say 'was' because most of the issues have been resolved and the remaining ones will most certainly have gone by the time you read this.

Impression and *ArtWorks*, the most important applications of their kind for many users, fell flat on their faces with StrongARM. One swift drive up to Computer Concepts and versions 5.10 and 1.702 of *Impression Publisher Plus* and *ArtWorks* respectively were installed, loaded and running smoothly. Not just smoothly but swiftly too.

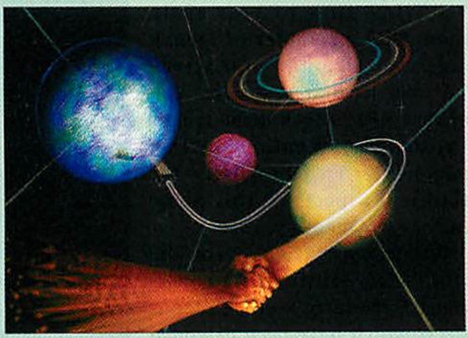
This is where the good news really starts. Was it my imagination or were installation and loading quicker than usual? Surprisingly, yes. Wimp polls are ignored in RISC OS 3.7 so many programs are sped up, much in the same way that Clares' *Speed* works on earlier versions of RISC OS. This helps floppy disc formatting and read-writing but the StrongARM also appears to boost hard disc access and read-write times considerably.

I am uncertain whether this was in the original plan for 3.7 or if it is another of StrongARM's performance improvements that Acorn did not expect. Whatever the case, StrongARM and RISC OS 3.7 make booting-up, desktop operations and filer operations far quicker than before. I am especially impressed with the boot-up sequence starring the new Acorn Risc Technologies start up plaque which cannot be fully appreciated as it's never there for very long.

Applications, likewise, are faster to load and once running, now gallop where they used to trot. *ArtWorks* and *Impression* are in the order of 500 per cent faster for every operation. The infamous Computer Concepts' Apple appears in less time than it takes to say Granny Smith.

- *Ovation Pro*, always faster than *Impression* in text rendering and many areas of redrawing is now around four times faster than before
- *Draw* has suddenly become very useful to me for instant JPEG decompression where once it was too slow for anything serious
- *Photodesk* I estimated to be 10 times faster than on an ARM 610 for some functions and the virtual memory was boosted thanks to the improved disc access. This is quite a remarkable jump in performance, made tangible when redraws and undoes finish almost instantly on all but very massive canvasses.

Not one special effect on a complex 8Mb bitmap took long enough to warrant the use of the escape function. However, compared to a 200MHz PowerMac running *Photoshop* an Unsharp Mask (often used to enhance scanned imagery) on the same 8Mb file as above, the StrongARM was slower: The Mac took just 20 seconds shadowing the Acorn's 80 seconds. But under a minute and a half is still very quick and the PowerPC 604 does have help from its fast maths coprocessor. Most importantly, I only parted with £250 to upgrade from 30 to 200MHz. That's more than £2500 in Mac currency.



Photodesk 2 at 200MHz took under 20 seconds for a global unsharp mask and undo on this 1600 x 1200 24-bit image. 2000 per cent faster than an A5000

Printing speed is also improved on standard devices, postscript files and direct drive files as data is rendered and transferred more rapidly. Even with a complex A4 text document at 600dpi, LaserJet IV TurboDrivers and Calligraph Direct Drive software generated the data faster than the 12 pages per minute that the printers can cope with. But I have been experiencing reliability problems with background printing since the upgrade.

Apart from the Argonet Internet Suite, which with a wee patch works admirably on RISC OS 3.7, I have not tested any other packages extensively enough to know how well they behave with StrongARM but other key packages such as *Compo*, *Studio24*, *Optima*, *CineWorks*, *TopModel* and *DaVinci* will all benefit from StrongARM, if they don't already.

Interestingly, one of the packages briefly tried which I expected to die immediately was the discontinued *DA's Picture*. It worked a treat and very, very fast. With a graphics tablet it is still the best way to sketch on the Acorn.

A complete software compatibility page can be referenced from Acorn's Web site and most software houses have their own compatibility and performance information. Some even offer free downloadable upgrades. There's also a feature with more details about StrongARM compatibility in this issue of *Acorn User*.

The power of StrongARM in the real world is as much as it promised in theory. Although it has not brought the RiscPC into a Silicon Graphics territory, StrongARM has proven itself to be one of the greatest bargains in computer upgrade history, at least with regards to graphics. Whether this is the case for all areas of Acorn computing I do not know. My fellow columnists will be the judges of that.

Next month...

Because there's been so much graphics news recently there has not been space for Pic of the Month. The competition returns next month as well as a look at the products previewed at Acorn World and news of the latest in desktop publishing.

Spacetech's new plug-ins

I have had a brief glimpse at the excellent new plug-ins for *Photodesk* and *Photodesk Light* which include zoom-blur, 3D ripple, crackle, spin-blur hatching and lens-mapping. For users of *Photodesk 2* the forthcoming version 2.05 includes full layering capability with real time position, effect and opacity controls and a very sensible user interface. Spacetech's motto of "anything Adobe can do, we can do better" is now more justifiable than ever. Even the most complex, multi-channel, multi-layered *Photoshop 3.0* files freely transferred between the packages.

Spacetech
Tel: (01305) 822753

Don't be a Dropout

It is claimed by iSV that their new No Dropout Technology (NDT) fonts can be reproduced at the smallest sizes without suffering from dropouts. Dropouts occur on serifs and thin areas of letters when the area becomes smaller than the printer can resolve. Sophisticated scaffolding and ensuring the font sits correctly on base line helps maintain thin lines in printing. The cost is also very reasonable at under £30 for 300 fonts.

iSV Products
Tel: (01344) 55769

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by email to augrafix@idg.co.uk.

ARMed 96

ARMed 96 is a perfect example of how not to do a demo and then proclaim it the best release of '96. Bad graphics, the use of a 147Hz screen mode (why?), boring code and ripped music. Not a good advert for ARMed Forces Software at all...

AutoSheet

Alisdair McDiarmid has produced a specialised educational maths program entitled *AutoSheet*. The application is given a set of choices including problem type, layout, maximum and minimum numbers and other specific options. It calculates a sheet of 18, 24 or 30 sums and an answer sheet which can be saved and printed easily. The program is shareware and can be bought directly from APDL, or from the *AutoSheet* web site at: http://www.users.zetnet.co.uk/amcdiarmid/software.htm

Midi PD software request

Peter Richmond is looking for various PD music utilities that exploit the sampling, MIDI and playback capabilities of his CC Eagle Multimedia card. Anyone interested in developing a basic sequencer for use with movies or librarian software to manage sample banks for synths should get in touch at the usual AU address. I'll pass on any replies.

FreeMem

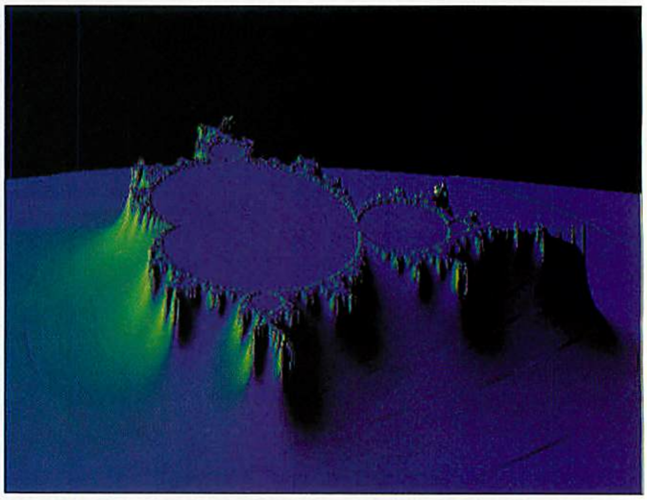
FreeMem, the handy time and free memory display program which sits constantly on my icon bar, wins the AU PD column award for the first StrongARM updated release. *FreeMem* is available direct from Liquid Silicon at: Liquid Silicon, FREEPOST EH2725, Kirkcaldy, Fife, KY2 5BR. Or on the web at: http://www.cybervillage.co.uk/acorn/liquid/

Coolyze

Author of da rather dubiouz Xperience (wow! they're great) web pagez, Bernhard Ludewig, haz come up with a relatively pointless, but actually quite c00l, utility. *Coolyze* takez a text file (typically da help file 4 a demo) and "c00lyzez" it 2 uze scene terminolo-g. Wh@ am I talkin' here? Well, diz text here haz been Coolyzed. *Coolyze* can be found on TXP's web pagez @: http://www.stud.uni-hannover.de/~bcl/xperience

MissTech

IT'S THAT time of year again when ARM assembler of French origin spirals onto your screen and does its best to amaze. Yes, the new ARM's Tech demo is here – written almost entirely by that code-meister Frederic Elisei – the technical aspects of this demo really blow you away.



Written specifically for the StrongARM, *Misstech* is a collection of Frederic's most recent effects which have been extended to push the StrongARM to its limits. Running on a RPC700 the effects are impressive but on the whole a little slow, on the StrongARM it's all fluently smooth.

To begin with, the face of a Ninja illuminated fleetingly by a moving light can be seen. As with the third and secret parts, this is just an improved version of Frederic's shading routines which were first released some time ago on the AU cover disc. In this form, they run at high-res using highly complex objects and on the StrongARM it's very impressive.

In contrast to these visually stunning fx, Frederic plays a blinder on the technical side with some ball fx. First up is a high res complex molecule routine that has perfect z-buffering and even runs at a good speed on the ARM700. Even better is an incredible display of a solid rotating sphere that's had various holes and shapes cut into it. The routine not only runs fast but draws the different layers of the object in perfect order.

It is still very impressive programming and shows off the power of the StrongARM

If you need just one routine to show off your new StrongARM, Frederic's *Julia* plotter has to be it. Making use of the StrongARM's ultra fast multiply instruction (see last month's column), the demo lets you scroll and zoom into a high res *Julia* set in real time. I remember the days of the BBC when it took hours just to draw a low-res Mandelbrot, that just makes it seem even more amazing.

In typical Elisei style, there's a nice plasma routine included in the demo called *Plastic pool*. This renders up a smooth flowing liquid that writhes around on the screen. To finish, the words *ARM'S TECH* gradually appear on the screen shaped in fire.

Demo aficionados will probably be quite excited at this point but there is a major omission. I don't want to denigrate the amazing coding put into this production, but there isn't enough design to make it into a proper demo. With some music and art contributions and the time needed to link the fx together, this could really blow the rest of the scene away. Unfortunately, as is often the case with these productions, time was the limiting factor. The demo had to be written to tight deadlines to make it onto the Acorn StrongARM CD.



Despite this it is still very impressive programming and shows off the power of the StrongARM very well. This is the future of the Acorn demo scene.

The demo comes on CD with the new StrongARM processor from Acorn, but is also a PD release available from the Acorn Demo pages at http://sidonie.imag.fr/elisei.

Unfortunately, a minor bug crept into the CD version, but this can easily be corrected by adding the line:

```
set dev$dir <Obey$Dir>
```

to the top of the !Run file inside a writable copy of ***MissTech***.

Polygon

WELL-KNOWN shareware author Martin Wuerthner, has come up with yet another excellent PD release. Taking advantage of the modular tools system used by *ArtWorks*, Martin has produced what must be the first shareware addition to the package. After seeing some of the extra features in *CorelXara*, Martin decided to add some extra functionality to the Acorn original.

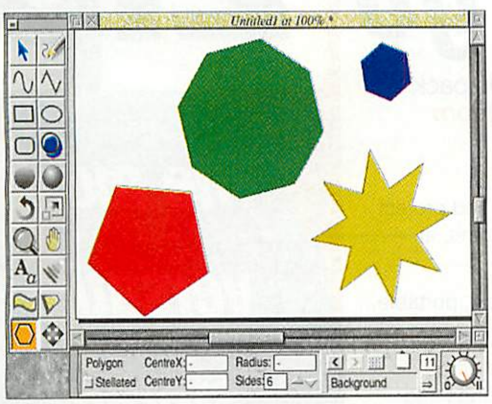
The new *Polygon* tool allows the creation of multi-sided polygons or star shapes. The style fits in perfectly with the rest of the package and adds a single new tool to the tool bar. Manipulation of objects is very simple and quick to perform. To all intents and purposes this tool could have come with the original package.

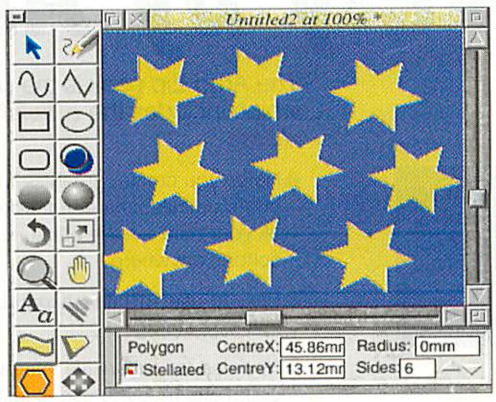
Installation is very easy. Just drop the new module into the !Artworks.Auto directory, disable the quick load option (if you have it set), and away you go. It's great to see PD authors participating directly in developing high quality commercial applications. It's just a shame the *ArtWorks* development kit is so expensive at around £40 from CC. Hopefully, Martin's release will set the ball rolling and encourage others to get involved.

Martin is interested in developing more tools for *ArtWorks* and would like to hear from anyone with ideas to take the package further. Please get in touch with him if you can help.

Polygon is shareware and I strongly encourage users to support Martin's development in this area.

The more people that register, the sooner we get more *ArtWorks* modules. A registered version is available from Martin Wuerthner for £10 at: Jahnstrasse 18, 71116 Gaertringen, Germany or by e-mail: wuerthne@trick.informatik.uni-stuttgart.de





Polygons of all shapes and sizes are easy to create with new Artsworks module *Polygon*

Connector

Andreas Zieringer's *Connector* application has been steadily developed over the past few months, and has now reached version 0.88b. *Connector* is a comms terminal package that allows you to connect to a BBS with a modem. Many people were put off after the first release due to some fairly major bugs in both the ANSI emulation and Zmodem file transfer actions. However, as with most PD applications, the author was there to deal with problems as soon as bugs were reported from users. *Connector*, although still in development, is now pretty much perfect and has been my choice of comms software for sometime.

Regular readers will know about my efforts to get everyone involved with PD, but this is yet another way of helping out. Next time you use a PD application that doesn't work, instead of thinking "this is rubbish, I'll throw it away", drop the author a line or two and tell him about it. Nine times out of ten the next release will run perfectly on your machine. As I always say, PD is a two-way process.

Connector's features include an excellent auto logon facility which uses easy-to-create script files. This cuts out having to enter your name and password when dialling a BBS. Control windows have all the features you need without being overly complex and the telephone book supports multiple lines and auto redial. *Connector* is Freeware and is available from all good bulletin boards. The latest updates usually hit Arcade first.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk. As always, I'm interested in hearing your views, reviewing your software or answering your queries, but please include an SAE if you need a reply.

Voxel

This month's graphical ditty comes in the form of Andreas Zieringer's *Voxel*. Not content with writing the best PD terminal program (also reviewed this issue), Andreas has coded up a controllable voxel landscape program. Cursor controls allow you to fly over the *Voxel* landscape that's very reminiscent of *Comanche* on the PC. Now we just need the core gfx routine to be made into a proper game. *Voxel* is available from the Arcade BBS.

Graphic

Graphic is a comms interface by Alexander Smith that enables data to be sent to and from a Casio fx-7700GB programmable calculator. This is the only calculator supported at present but Alexander plans to support more machines and develop an Acorn based program editor. It should be noted that a special hardware board is needed (devised by AU's Mike Cook) but Alexander is willing to build boards for any solder novices out there. *Graphic* is available from the Acornet web site in Germany.

Recommended PD libraries

The Datafile,
71 Anson Road, Locking,
Weston-Super-Mare BS24 7DQ

Naked PD,
'Fayence', Fulford Road,
Stoke-on-Trent, Staffs ST11 9QT

Arch Angel PD,
PO Box 41, Exeter EX4 3EN

APDL,
39 Knighton Park Road,
Sydenham,
London SE26 5RN

Five Star Marketing,
4 Shepherds Walk, Bushey,
Hertfordshire WD2 1LZ

Beebware PD,
83 Forrest Road, Huncote,
Leicester LE9 3BH

ARM Club PD Library,
Freepost ND6573,
London N12 0BR

Risc World PD,
daniel.hayes@argonet.co.uk



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Argo, FREEPOST PT795, Chichester, West Sussex PO19 2YZ

Tel: 01243 815815 Fax: 01243 815805 Email: sales@argonet.co.uk Web: www.argonet.co.uk

E&OE

Chatting about Internet Relay Chat

THE WORLD Wide Web might be the most highly visible attraction to be found on the Internet, but there are other functions to grab your attention, and your phone bill. One is Internet Relay Chat, or IRC, which is a multi-user, multi-channel chatting network that enables Internet users all over the world to chat to one another by typing on-screen in more-or-less real time.

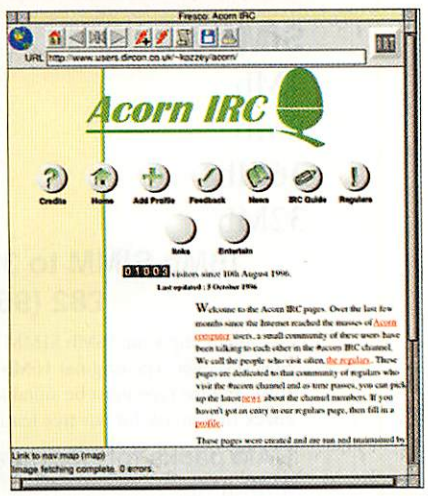
To use IRC you need an Internet account and suitable access software. Most of the Acorn Freeware and commercial Internet software packages available include a Telnet terminal which will suffice, and dedicated IRC client programs are available from Web sites such as Matthew Godbolt's Acorn-related Web pages at http://newton.ex.ac.uk/general/ug/godbolt/

Demon account holders have access to their own IRC server at irc.demon.co.uk, and there are other servers at various sites in the UK and round the world. IRC consists of a large number of named chat channels rather like rooms with names on the doors, where, after choosing a nickname to be known by to others on the system, anyone can join in the discussion.

There are a few commands to learn that join you to a channel, list and show information on the other users and so on. A certain amount of etiquette is expected in what you do and say, and I found the experienced users' comments rather inscrutable and cryptic, but don't be intimidated by them – just go for it.

A good introduction to the ways and means of IRC can be found at the Acorn IRC Web pages jointly hosted by Kozzey, otherwise known as Kaustav Bhattacharya, and Simon Kiff. Their pages contain all you need to know about #acorn the IRC channel for the Acorn Internet user, including IRC news and gossip, profiles of regulars to be found on #acorn, and a beginners' guide to IRC.

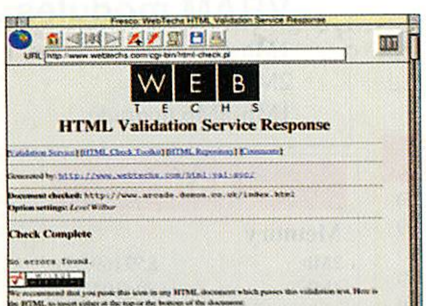
The Acorn IRC Web Pages
http://www.users.dircon.co.uk/~kozzey/acorn/



Simon and Kozzey's chatty web site

HTML or Help To Make it Legal

I RECENTLY tried the *WebTechs* HTML verification service found at http://www.webtechs.com/html-val-svc/index.html, and was mortified to find that most of my efforts at HTML contained inconsistencies and some mistakes that neither I nor several different Web browsers had noticed.



Hold the Front Page – it's passed!

One tends to think that if the HTML displays correctly, it must be all right. Web browsers will try to make educated guesses about incorrect coding, but different browsers may make different guesses, so mistakes really ought to be eliminated.

WebTechs' page offers you a Form with buttons to select the HTML standard for which your code is written, and space to enter the URLs of the pages to be checked, which must be reachable when you submit the data. WebTechs server accesses your pages and parses your HTML, reporting back on what it thought of it. You can also enter short segments of code for a quick syntax check.

The most recent HyperText Markup Language standard is called HTML 3.2 or *Wilbur* and is intended to be browser brand-independent. You must start your HTML with the correct Document Type Definition (DTD) for the verification service to check against, otherwise you will get misleading error reports back. The DTD for HTML 3.2 is: <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2//EN">.

If your HTML passes, you are rewarded with a special icon to add to the page showing it conforms to the standard. (The icon is actually on the US *WebTech* site, so you might want to place it locally on your homepage server.)

Tom Hughes' Freeware *!HTMLCheck* program also validates HTML files offline on your desktop using the part-licensed and part-PD sgmls SGML parser. If you have Acorn's Desktop Environment modules and a suitable text editor such as *!Zap*, this is simply drag and drop, but command line operation is also possible.

!HTMLcheck is at ftp.demon.co.uk/pub/archimedes/www/htmlcheck.arc and you can e-mail Tom Hughes with mail to: tom@compton.demon.co.uk

Faster, faster!

US Robotics has announced its proprietary x2 technology that almost doubles the existing modem speed limit of 33,600bps to 56Kbits per second. Good news is that Sportster Voice models sold since September 15 1996 can be upgraded free when the x2 software is released in January 1997, and users of existing 33k6 Couriers can Flash-ROM upgrade at low cost.

The bad news is the speed increase is only one-way, from USR-equipped Internet Service providers with direct digitally-connected modem racks to their customers, so web-surfing will speed up, but no hobby BBS systems will be able to offer faster downloads.

US Robotics
(01734) 228200

Wombat found in Germany

Take advantage of BT's recent deals in international calls and dial Wombat BBS in Germany. Sysop Christian Kohlschuetter promises a friendly reception and offers over 4000 programs and files to download for Acorn RISC OS computers. Wombat BBS is online from 18:00 until 07:00 local time in Germany which is 1 hour later than GMT.

Wombat BBS
[+49] (0) 9286 97211

Scottish show

A reminder if you missed the details last month that Robert Todd of Todd Education Computer Services has organised a regional show for all Acorn owners in the central belt of Scotland. The ART 'Roadshow', Clares, ArgoNet and Tower Electronics are among those companies expected to attend the event which is to be held on Saturday December 8 at the Stakis Hotel, East Kilbride, Scotland. Admission is free and the show runs from 10am to 6pm. You can find out more from Robert's WWW home page or by telephone.

http://homepages.enterprise.net/rtodd/show.html
(0141) 644 4952

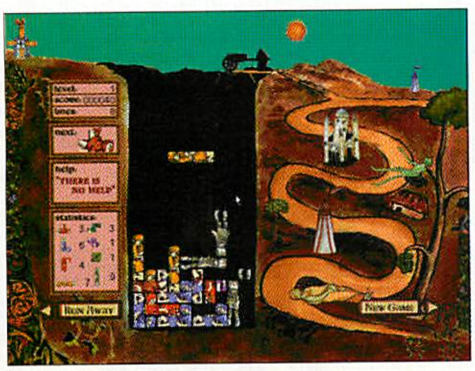
Go on – treat yourself

IF YOU ARE still wondering what to give yourself for Christmas here are a couple of goodies that you can be assured won't fall apart when you try to run them and are, each in their own way, among the best around.

Monty Python's Quest for the Holy Grail

This is not a PC game! Let me explain. It only runs on a PC (as in Intel inside PC), but it isn't PC as in Politically Correct. If easily offended give this game a wide margin; if you like being easily offended, read on.

Many years ago, back in the dark ages when some people still had black and white televisions and everyone was grey, along came Monty Python's Flying Circus. Through an oversight it got a slot on BBC TV and became a cult, dividing the world into those who thought it brilliant and meaningful, those who thought it unbelievable but also unbelievably funny (sometimes) and those who remained baffled, upset and grey. To those categories we now have to add another sad group – those too young to know!



Bring out your dead

The Search for The Holy Grail was the Python team's first film (I think) and like the series it divided the people into, well, see the list above. As for the software. Will you like it? I don't know, can't tell, wouldn't say. It makes me giggle, my wife loves it, my sons are bemused – they sit there giggling at the idiocies and then say they don't understand.

Technically the software is excellent. It combines some neat graphics with original film clips and Terry Gilliam style cartoons to great effect – the latter are superbly suited to computer animations and the feel of the original film is maintained.

You are taken on a quest for the Holy Grail. At every new scene a historian pops up to tell you what is going on. He introduces enthralling and terrifying places such as Castle Anthrax and its population of virgins (all aged between 16 and 19 and a half), you must negotiate Plague Village (Bring out your dead!) and after many adventures, you must face the Killer Rabbit.

On the way you can play Spank the Virgin – I told you this was not PC – and Bring out Your Dead, a totally absurd version of *Tetris* in which the pieces are dead bodies being tipped into a pit. Being a Python version, the long straight bits are replaced by bodies that aren't quite dead and complain all the time. And naturally, since they are not dead, they twist around on their way down and it's very difficult to get them into place!

In best Monty Python tradition, every screen is packed with nonsense and a few clues to hinder or help your quest. You can spend hours clicking on all the features and triggering all manner of comments or graphical sequences – you should see what comes out of the virgin's hat!

Of course the whole point of this – no, it's no use pretending – there is no point to it. It's just great fun.

It runs well on my 133MHz – only the long intro shows up a slight sync problem and the sound is mostly perfect. I can't test it on slower processors but on reducing the memory to below 8M it didn't crash, just slowed it down. Allocate as much memory for the best results although the package doesn't rely on processor speed for its effects. If you find it funny, it will still be funny at a gentler pace.

Civilisation II

This is a very different kind of game. You get to be the leader of an emerging culture and it's your job to control it. You choose which technologies to invest effort in, who to attack and who should (at least for a while) become allies. As ever, the ultimate aim is world domination. Personally I find it somewhat ironic that *Civilization* should be about forging alliances and breaking them to your own advantage, about crushing other cultures and zapping everything else in sight.

If you like this kind of game, this is one of the best. It works well, has plenty of variety, a great many options and bundles of detailed information to work through. Video clips of advisers pop up to tell you what is going on – these do get a bit repetitive – and the graphics are good. (It's a shame the game was written for the PC – the main map could be better and more sophisticated graphics capabilities could have improved this feature.)

The game evolves in a satisfying way, taking you, if you choose, from primitive cultures with bows and arrows up to stealth fighters. There are pre-set scenarios to play, such as WW II, or a choice to edit your own maps. There's even a Deity level for the truly committed player – no I haven't got that far!

This game is written for Windows (3.1 or higher) and runs perfectly well via Windows. It's not dependent upon high speed processors to work so although screen re-draws may be slower, I can't see any reason why lower spec processors wouldn't be playable.

Contact

You can contact me, Mike Buckingham, by post at the usual *Acorn User* address or by dropping me an e-mail at: *aupcpage@idg.co.uk*

Return of Arcade

Microsoft has recently released a compendium of four old style arcade games called *Return of Arcade*. It includes *Pac-Man, Dig-Dug, Pole Position* and *Galaxian* (traditional space invaders game). The graphics are intentionally old style – reminiscent of the Spectrum. You might expect it to run quickly on a PC card but it doesn't. I really don't understand why such poor graphics and simple gameplay can be so slow. I'd get that old BBC Micro out of the cupboard instead – it's much better.

ASPI drivers

If you want to access such things as Syquests, Panasonic PD drives, Zip drives etc, from your PC card so that you can use them properly (without having to reboot every time you change a disc) you need an ASPI driver. At the time of writing there isn't one on the market however there should be two available soon. By the time you read this Aleph One should have a free driver downloadable from its website and Alsystems should have its driver on the market. So contact them for the latest on availability.

Aleph One
Tel: (01223) 811679
Website: http://www.aleph1.co.uk/
Alsystems
Tel: (01420) 561111

!PCPro update

Good news for StrongARM users. Now that the SA is freely available, Aleph One is collecting bug reports and are busy making the necessary alterations to *!PCPro*.

The update will be available via Aleph One's web site. Non-web customers should send back their Aleph 1 *!PCPro* disc and request and update for StrongARM.

It seems that it does mostly speed things up. Some DOS games reportedly run much faster! There is a possibility that a few operations might actually be slowed down because of its different architecture – a problem that will hopefully be fixed in due course.

AppsClock

Andrew Booker



This excellent little application replaces the word under the *Apps* icon on the iconbar with the current time, using just under 4K of the module area.

The usual features of the Apps icon remain: clicking Select or Adjust — although the effect of an Adjust click can be modified. The iconbar icon menu has been extended slightly.

AppsClock can also be used to switch your machine between GMT and BST, display the date or the amount of free memory temporarily before switching back to the time. In addition you can force the icon to open a different directory the — except that it shows the time below — it can also display the date and the current free memory in the machine than the default *Resources:$.Apps*.

PD Scheme

To load *AppsClock* just double-click its icon, alternatively add it to your boot sequence with the line:

```
WimpTask Run <path-name>.!AppsClock
```

This should be run after the desktop has been entered, the *pathname* is the place you are storing the *AppsClock* application.

Clicking Adjust on the icon usually has the same effect as clicking Select — opens the apps directory. But the effect is controlled by the system variable *AppsClock$Options*. Changing this will change the effect, the command to use is:

```
SetEval AppsClock$Options <n>
```

where *n* is:

0 Open the directory *Resources:$.Apps*
1 Open the directory *Resources:$*
2 Display the date instead of the time
3 Display the free memory instead of the time

If 16 is added to any of these numbers (16 to 19 instead of 0 to 3) then clicking Adjust when either the date or free memory are displayed will cause the other value to appear. This gives extra functionality in the form of an Adjust double-click.

When the date or free memory are displayed either from the menu selection or from an Adjust click, the value will appear for about two seconds then will revert back to the time. Free memory is displayed in Kb up to about 8192K and will then change to a Mb display.

To alter the directory that's opened there are two system variables that can be set: *AppsClock$AppsDir* and *AppsClock$RootDir* the first holds the directory name used with a normal click while the second is for the directory being referred to as the root directory. By default these are *Resources:$.Apps* and *Resources:$* respectively.

If you want it to open your main applications directory instead include a line like this:

```
Set AppsClock$AppsDir
ADFS::HardDisc4.$.Apps
```

As part of the boot sequence *after* AppsClock has been loaded.

Finally it possible to set all the options from the command line or in the line which runs AppsClock in your boot sequence the syntax for the command line is:

```
Run <path>.!AppsClock [ <opts> [
<apps dir> [ <root dir> ] ] ]
```

where <opts> is the value for AppsClock$Options; <apps dir> is the directory name for AppsClock$AppsDir; and <root dir> is the directory name for AppsClock$RootDir.

Full details are in the extensive help files with the program.

Coming next month: Xenon II

Exclusive to *Acorn User* magazine is the high-powered multi-format game *Xenon II* from VTi/Eclipse. This superb horizontal scroller has been specifically modified for *Acorn User* for use with 16-bit sound *and* it's StrongARM compatible.

Don't miss out on this exclusive opportunity to get one of the best arcade action games ever to appear on the RISC OS platform.

Get your subscription now or order your copy through your newsagent.







RISC OS 3.7 ROM Patches

Since release of the StrongARM / RISC OS 3.70 upgrade, two minor problems have been identified. These are fixed with this patch utility.

The first problem occurs with the parallel port, when connected to some Hewlett Packard printers. The symptom is that printing to file is fine, but printing to the printer is extremely slow. With the patch, a wider range of HP printers is supported.

The second problem can cause occasional errors with some applications. This only affects RISC OS 3.70 when running on StrongARM (SA110, revision less than 3). Typically, occasional errors occur including the message "No stack for trap handler". This rare problem is entirely unrelated to errors caused by application incompatibility with RISC OS 3.70 or StrongARM.

For developers, there is technical information on the second problem, and how it may affect their code, in the TechNote file.

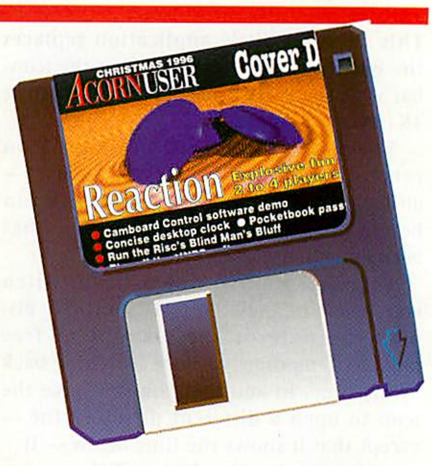
These patches may be freely distributed to others for use with RISC OS 3.70, provided they are distributed unaltered and complete. The complete distribution comprises:

!!ROMPatch
ReadMe (including installation instructions)
ROMPatch (directory and contents)
TechNote

These patches must not be used with any other version of RISC OS.

Great Extras

- The first section of code for the Write-your-own arcade game series
- Camboard's *Simple Control* software demo
- The modules missing from last month's cover disc
- *Out To Lunch* – the most requested piece of PD software from the Acorn World show

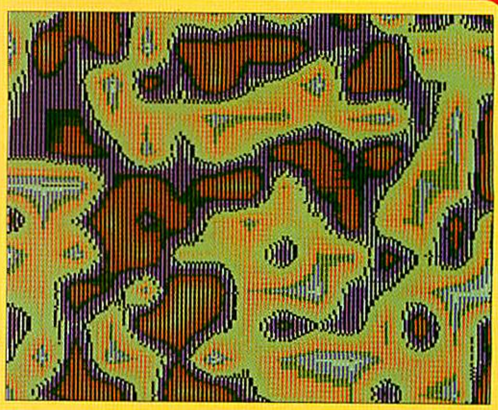


Sorry

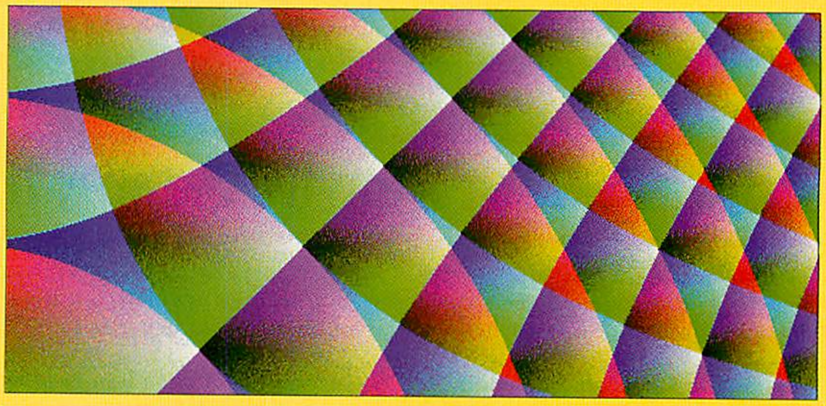
Last month's disc presented a couple of problems for some readers who could not run the *Shanghai* game and PCA examples, as the TinyStubs and Toolbox. Window modules were not included. We have supplied them on this month's disc.

Regular items

- Bucketloads of *INFO from graphics to games
- Mike Cook's Blind Man's Buff program
- Steve Mumford's Wimp C looks at creating your own file format



Alister Turnbull's *Dither*



Nigel Stoner's *Slickoil*

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

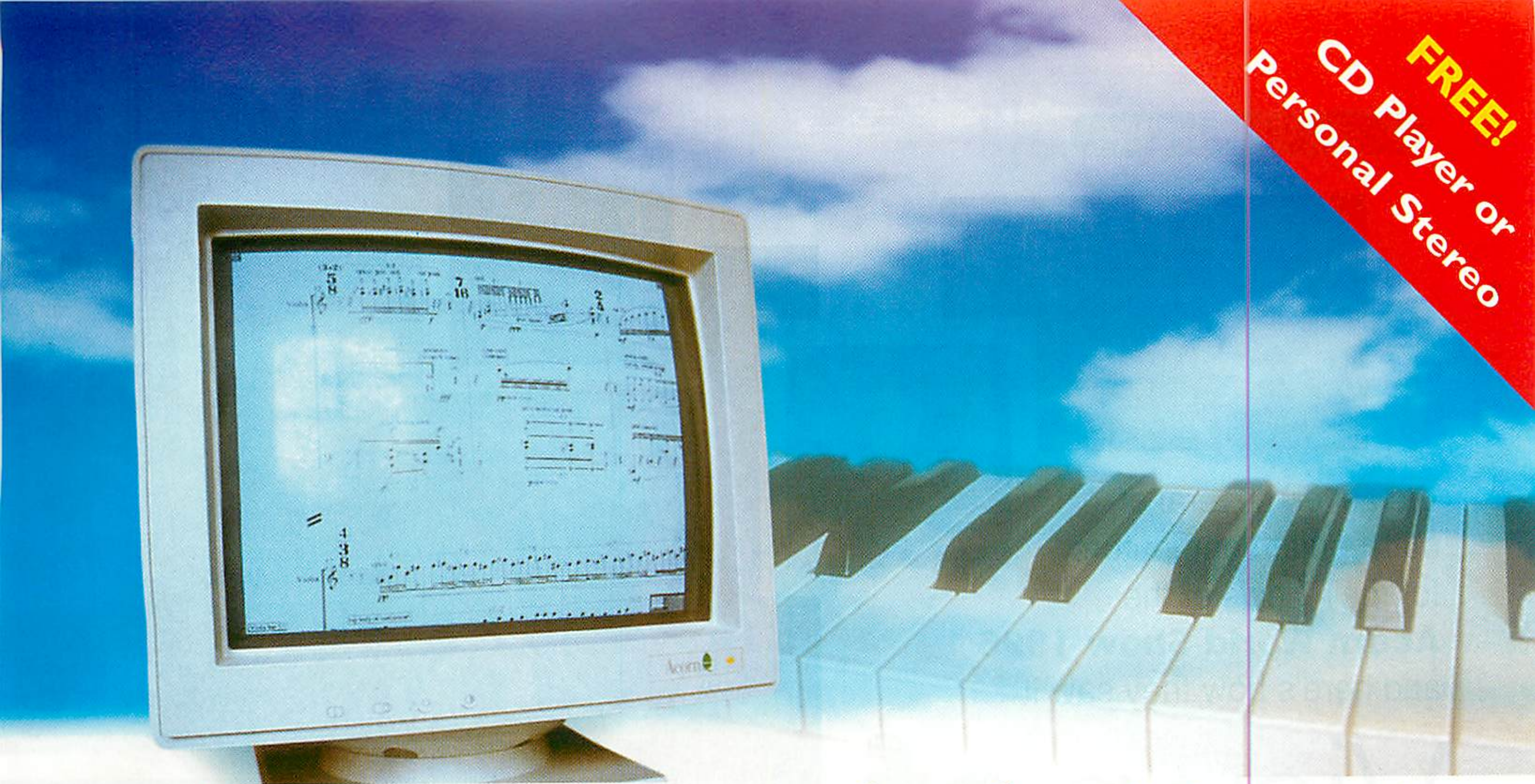
Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

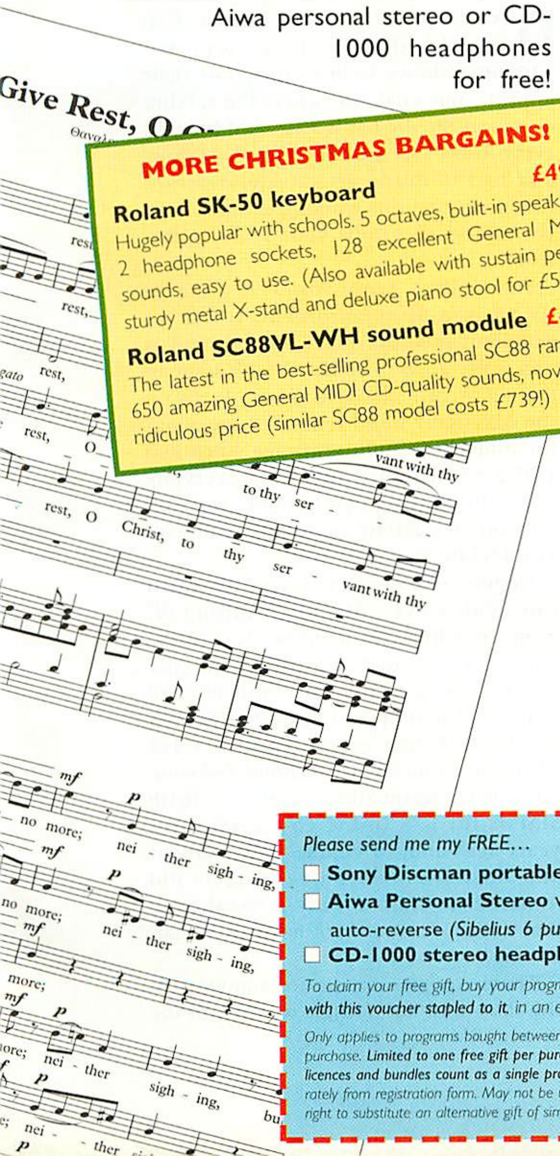
If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.500 from Pineapple Software.



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The Sibelius programs need no introduction – suffice to say that they are the most highly-acclaimed music software on any computer, used by such famous names as the **BBC**, **Royal Academy of Music**, **Royal College of Music**, **Yehudi Menuhin School**, **National Theatre**, **Oxford University** and thousands of others.

They've received rave reviews throughout the computer and music press – and in almost every national newspaper, including ***The Times***, ***Sunday Times***, ***Independent***, ***Financial Times*** and ***Daily Telegraph***.

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Only applies to programs bought between 1.11.96 and 25.12.96 inclusive – we reserve the right to require proof of purchase. ***Limited to one free gift per purchaser. Upgrades, updates and extra stand-alone copies are ineligible. Site licences and bundles count as a single program for this purpose.*** *This voucher will not be accepted if returned separately from registration form. May not be used in conjunction with any other special offer or discount. We reserve the right to substitute an alternative gift of similar specification if necessary. Voucher nominal value 0.001p. E&OE*

"This extraordinary computer program has changed the music world forever"
– ***The Times***

"In a totally different league from anything else"
– Paul Patterson, Professor of Composition, **Royal Academy of Music**

"There are countless educational possibilities for this software"
– ***Music Teacher*** magazine

"Instantly captured the imagination of staff and pupils alike"
– Paul McMasters, Head of Computing, **Winchester College**

"Sibelius 7 feels as if it has musical instincts" – ***The Independent***

"The biggest surprise with Sibelius is how simple it is to learn and use effectively… the most comprehensive music package imaginable"
– ***Times Educational Supplement***

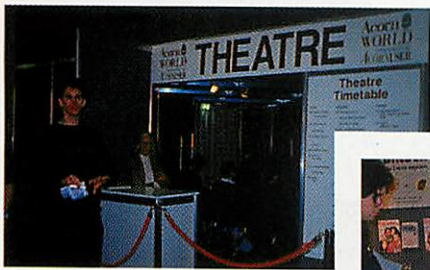
"Dramatically reduces the time it takes to compose a piece of music"
– ***Financial Times***

"As easy to use as pen and ink"
– **John Rutter** (composer)

"Sibelius 7 can notate, print and play a musical score at a pace even more rapid than Mozart at his most fecund… Imagine what wonders Bach could have worked with such technology"
– ***The Times*** leader column, 31.1.96

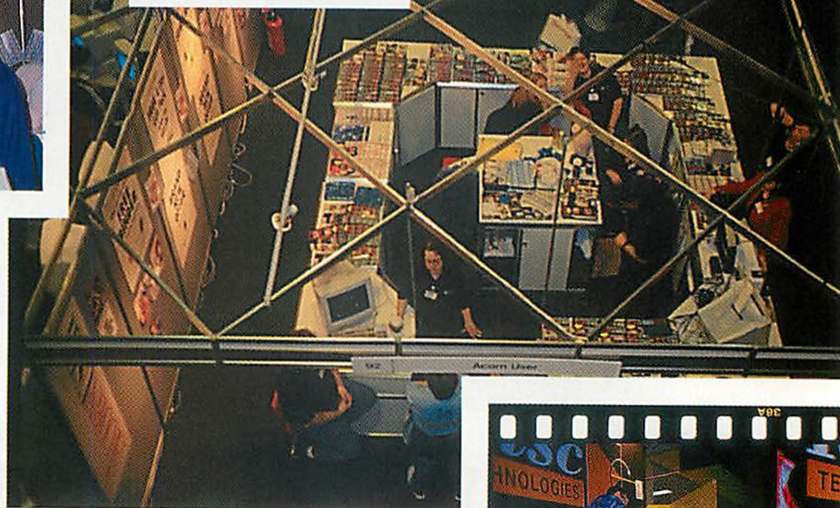
Sibelius Software, 75 Burleigh St, Cambridge CB1 1DJ
Tel: 01223 302765 • Fax: 01223 351947
email: info@sibelius.demon.co.uk
http://www.acorn.co.uk/developers/sibelius/

Prices exclude VAT and delivery*, and may vary or change. Site licences & bundles available – details & prices on request. See voucher for free gift conditions. E&OE*











We asked several of our regular contributors for their views of the **Acorn World Show 1996** and here's how they saw it

Views of Acorn World

Mike Cook: Each show has it's own feel and Acorn World 96 was no exception. From my point of view I would say that the feel was one of calm rather than excitement. This contrasted well with the undercurrent of doom pervading last year's show. Quiet confidence oozed from many of the stall holders I spoke to. The visitors too had a sense that they knew their place in the scheme of things – they were not members of the rabid MS DOS pack tearing each other apart but members of a select community.

Thanks to all of you who told me what you thought of my articles. It really does help a writer to know that people actually read their work.

Most people said that they always read but never make – that's fine by me, I'm sort of making it for you anyway. I was quite pleased with the reaction to my sound square, it seemed to cause great delight to all those who tried it.

I was surprised by the number of people who told me that they had a StrongARM card but hadn't fitted it yet. Most are waiting for all the software conflicts to be sorted. One exhibitor, MCS, had the answer though, in a card that allowed both processors to be fitted and software to switch them over.

The only disappointment was the number of people who were new to Acorn computers which seemed to be much lower than in previous years.

Mike Tomkinson, Business Editor: Acorn World 96 was a wonderful event. There was a real buzz and it was not all to do with StrongARM. One exhibitor said to me that there were many more new faces around this year. That is what Acorn World is about – meeting and talking to people, putting faces to names, making useful contacts and buying and selling.

Business was brisk everywhere – all stands seemed to be trading well on the back of some excellent Show bargains at special prices. As an example Colton had sold out of *PipeDream 4.5* upgrades by dinner time on Saturday and reported record interest in all products. At *Acorn User* we gained another 300+ subscribers and some people describe the Acorn market as shrinking?

All the big mainstream players in the Acorn market were present although a few of the purely education software houses are obviously waiting for BETT. However, it was good to see so many of the smaller companies taking stands and demonstrating real committment to and belief in their products.

The Show itself was busy on the Friday and *really* busy on the Saturday but never at the point where you could not get round and talk to people. Friendly is the best word to describe the atmosphere, unlike so many PC shows where everyone just rushes around looking hunted.

The only black spot, to my mind, was the stand featuring people smashing a defunct PC with a hammer. This upset many showgoers and was a mistake. It was an even bigger mistake to site this alongside the Theatre as the noise ruined some of the talks. It was obviously meant as a joke but I think it failed badly and should not be repeated.

Dave Lawrence, *INFO Editor: Call me old and boring if you want but computer shows seem to have lost their appeal somewhat. Of course I'm talking as one of the die-hards that used to go to every *Acorn User* and *The Micro User* show *and* had to queue up outside to get in! Five years or so of working on the *Acorn User* stand also dulls your senses somewhat.

For me then, Acorn World '96 was a little bit of a disappointment. It was an excellent meeting place though and it was really great to catch up with some of the old 'Acorn' characters. Gary Partis on the AISystems stand reminded me about the time about eight years ago when Rob Miller and I fooled him (and everyone else) into thinking that Gauntlet was running on an A440 by cunningly hiding an ST under the desk.

Despite all this a few things did catch this cynic's eye – *WinRisc* running PC progs in a RISC OS window; The 'Stork' and 'NewsPad' tucked away on the ART stand, along with the natty little NC and Linux and BSD up and running; The *lack* of any really new games; AISystem's 4x4 CD-ROM; Groovy new 6502 and Z80 emulators from Warm Silence Software; 16Mb SIMMs for £75 (mine cost £500 three years ago) and, of course, Peter Bondar and Alistair France pulverising an old Amstrad. It did cross my mind though that a Risc PC would not have lasted half as long.

There you go – my potted summary of the show and not a single mention of the StrongARM...















Geoff Preston, Education Editor: From an educational standpoint, there were several significant products on show, all but one of which have been reviewed in *Acorn User*. The one that I've been waiting for, and one which will get a full review very soon, is Sherston's *Rusty Dreamer*. It is the first major piece of work by Mike Matson since he left 4Mation to join Sherston.

Mike is well known in the Acorn world as the producer of some of the most popular pre-school/primary school programs. *Rusty Dreamer* is in a slightly different vein being aimed at top primary to lower secondary. The problem with many programs is that while the content may be suitable for 11 and 12 year olds, the presentation frequently is not. How many 12 year olds are motivated by witches and enchanted forests? Both the content and the presentation of *Rusty Dreamer* are suitable for up to 12 years.

The other significant feature about this software is that it is truly differentiated. When the program is run you must select the required age range. The result of this input will determine the amount of text, the depth of explanation and the vocabulary used.

The program is illustrated with some fine animated sequences using a mixture of digitised photographs and drawn images. Typical of this technique is when one frame which features a hand-drawn bird flies behind a photographed tree (which is in front of a photographed background) while casting a hand-drawn shadow on the photographed undulating ground beneath. How does he do that?

Paul Wheatley, PD Page Editor: Interest in PD software has been slowly building at the shows over the last few years. This year saw both the Datafile and APDL as exhibitors, not to mention a host of other PD related stands like The ARM Club. It's great to see the PD scene doing so well alongside the obvious stars of the show, ART and Online Media.

A major highlight of the show was seeing Mr Sincronia Multimediali himself, Paulo Rossi, demonstrating *TopModel* on the Spacetech stand. With a StrongARM in the machine and the author of *TopModel* at the controls, the rate of object creation was astounding. All the onlookers present agreed that videos of the package in use would be an invaluable learning tool. Roll on the *TopModel* users' club. On the games front I was a little dissapointed at the lack of new releases. Fortunately there are several games about to hit the streets. I had the chance of chatting to Andrew Docking, the author of the most exciting of these, *Drifter*. The latest demo from Andrew reveals the game as a stunning texture-mapped racing extravaganza. Watch the games page for more news soon.

For me, the 1996 show was my first chance to work on the AU stand and meet readers. Thanks to everyone who came along for a chat or contributed software for review in the PD column. See you again next year.

David Dade, Comms Editor: ART were showing off the Network Computer and its full-screen version of the ANT Fresco® World Wide Web browser which looks quite different to that of the ANT Internet Suite. The Oracle Inc. screen design features a blue-toned colour scheme and discreetly-styled button bar.

There are no scroll bars as the display is optimised for TV viewing. To view other parts of the web page you drag anywhere in it with the mouse pointer, which I found could easily take you off to a link that happened to be under the pointer.

R-Comp were offering their latest version of *!HTMLEdit* v2, and their Web Designer's Toolkit which allows easy creation of the HTML for tables, frames, animated GIF images, imagemaps and more.

ARMed Forces Software showed their RSDFS Full FS serial filing system and the intriguing *WinRisc* package for PC cards allowing Windows applications to run in RISC OS windows. ArgoNet/Eclipse/VTi were featuring their latest Internet software package, 33k6bps modems and Zip drives at show prices. The ARM Club stand featured a BBS-promotion section, where a large map of the UK showed the location of many Acorn BBSs to which live connections were being made from a computer and modem. Many Acorn BBS sysops visiting the show could be found at the stand at various times. There was a tangible atmosphere of enthusiastic expectation at the Acorn World Show this year that was quite absent at the rather gloomy 1995 show.

Acorn User would like to thank all exhibitors who donated prizes for the Lucky Dip. It was as successful as ever – did you see the queues? This year we raised £650 which will be going to Great Ormond Street Children's Hospital Fund.

Draw Aid

Jack Kreindler discovers an easy way of programming



Complex object creation made easy with DrawAid. The Eurofighter was created using the powerful PROC-poly-curve and PROC-symbol-star commands

There are two types of computer programmer. Those who think they know about programming and those who really do. I do not fall into either category as I am a graphic artist and self proclaimed dunderhead when it comes to coding. The most advanced program I created was a cutting edge, BASIC three-liner in 1989. It plotted my name in system font all over the screen and didn't stop.

Impressive maybe, but certainly not as accomplished as Carvic's *DrawAid* version 3. Created by William Graham, it actually makes programming possible for the likes of me. It enables the user to create vector files from BASIC programs which are normally incredibly difficult or tedious to manage by hand; like correctly intersecting cog wheels and complex tessellations.

This kind of vector object is highly dependant on mathematical rules and functions, not on good mouse control and artistic flair. What *DrawAid* does is enable people like myself to 'program' such objects without needing any programming experience or brain cells for that matter.

DrawAid understands a powerful but very simple language – a customised set of BASIC commands from which it generates Draw files. An example of the commands is the one to generate a circle: by loading the blank BASIC program called AidBlank into Edit, typing the PROC_circle command below the prompt and dragging the program onto *DrawAid*, a circle Draw object is created.

The characteristics and position of the circle can be typed in brackets after the PROC_circle command. So a circle with no outline, no outline colour, fill colour red, at x coordinate 50 and y coordinate 50 and a diameter of 10 would be programmed as:

```
PROC circle(0, 0, 11 , 50,
50, 10)
```

or alternatively you can use the documented aliases instead of codes which for the above circle with a blue border of 2pt width would be:

```
PROC circle(width2, blue,
red,  50, 50, 10)
```

It may sound very strange but I felt a real sense of achievement creating those two objects. Perhaps it's all those years of programming failure and suddenly being able to create little graphics. Of course, entering commands for *DrawAid* is hardly programming but that is the whole point. The program asks for the bare minimum of 'code' and then does all the rest.

Simple objects like the ones above can all be created just by clicking and dragging in Draw, so the real benefit of *DrawAid* is only seen when using the more sophisticated functions. The entire set of commands and variables is printed and thoroughly explained in the attractive A4 binder which comes with the program. This explains how all the commands available can be used, from visualising mathematical functions and equations to creating graphs from CSV data.

In order to plot the objects found in the composition pictured, many of the programs using the more complex commands were needed. Using the manual and manipulating the demonstration programs that come with the package, it soon becomes clear how to tailor and even create your own programs.

I must say that some of the ready-to-use programs were too complex to understand. The Bar-Code generator was one, but although I could not fathom exactly how the program worked, it is still very valuable to have. Actually, almost all the routines supplied on the single floppy are useful in their standard form, though the potential for tweaking the code to suit individual needs remained.

The front end of *DrawAid 3* is very unlike the little PD packages around which have one or other of *DrawAid*'s abilities as it is fully RISC OS compliant, multi-tasking and sensibly laid out.

All the windows appear when the program is loaded: The main *DrawAid* window has dialogue areas and a data entry box which can be exploited in your BASIC programs to prompt, advise or inform the user. One of the latest additions to the user interface allows re-scaling of the generated image preview window to any screen size and scaling of the graphic to the window with a single mouse click.

The generated Draw files are conveniently stored on the hard disc in a directory which automatically appears with the other *DrawAid* windows. Overall, version 3 is well-designed, well documented and therefore easy to use as a RISC OS application.

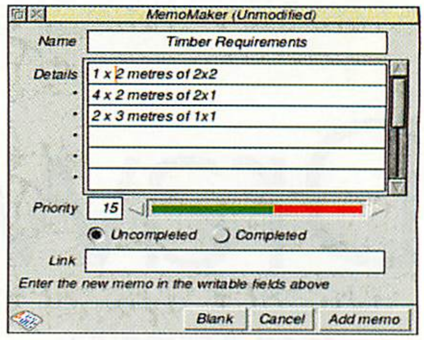
As an aside, *DrawAid* could even be used in education to teach aspects of mathematics, geometry and trigonometry. It would be especially powerful as a learning tool as it is very easy to operate, is highly interactive and the end results can be seen in full technicolour. Its main purpose is to bring together the disciplines of visualisation, data processing and programming. *DrawAid*, especially version 3, fulfils this purpose exceptionally well.

Product details

Product: DrawAid 3
Supplier: Carvic Manufacturing
Address: Moray Park, Findhorn Road, Forres, Moray, Scotland IV36 OTP
Telephone: (01309) 672 793
Price: £15 inclusive & 60 page manual is £10 for existing users

A trio of makers

Find out with **John Allen** why time doesn't have to mean money



Three low-cost time management tools have been produced by Carlton Software – intended to sit on the iconbar ready to leap into action at a moment's notice. They can be used singly, in combination or with other applications.

The three are *DateMaker*, an appointments keeper; *MailMaker*, an address and contacts database; and a note keeper, *MemoMaker*.

DateMaker

This builds on the functions of the standard RISC OS Alarm application.

To enter an appointment, type in the reason, click a few icons to associate it with a date and time and to prime an alarm for a set number of days before the appointment. A permanent alarm goes off every day up to and including the day of the appointment, while a non-permanent one only sounds on the day.

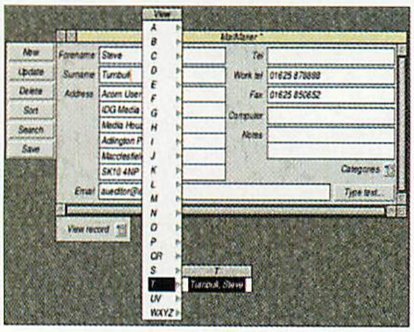
These alarms go off when the computer is switched on at the beginning of a day rather than at a particular time during the day, so you won't be reminded at 2 o'clock to meet someone at 2.30pm – to do that you will need to use the RISC OS Alarm.

The diary can be searched for a particular string either across all appointments or starting from a nominated month. It is also possible to export a list of appointments between two selected dates in either DDF or tab-separated form – a handy reminder when you are compiling an expenses claim.

To keep more information than fits in the text reason icon it is possible to associate a text file with each day for more detailed notes.

Product details

Product: DataMaker, MailMaker, MemoMaker
Supplier: Carlton Software
Address: Felmersham Road, Carlton, Bedford, MK43 7NA
Tel: (01234) 721448
E-mail: info@carltsw.demon.co.uk
Price: One program £8.50, two programs £16, all three £23 + £2.49 P&P



MailMaker

This is a straightforward desktop address book database – probably the most common database requirement – avoiding the fiddly set up of a more general purpose package.

Many of the normal database functions are present. To me this is the most useful of the Maker applications.

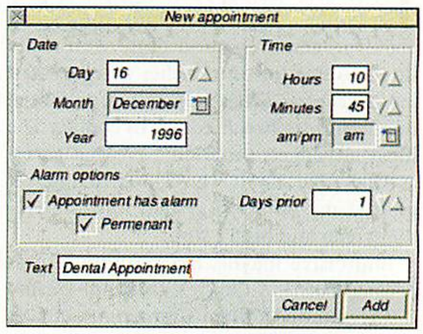
It is possible to search for records based on the contents of particular fields and there is a very handy record selection facility which gives quick menu style browsing by surname.

Records can be classified by category, for example family, friends, members of the Sailing Club, and these categories used to select records to output as either CSV or TSV files for other databases, spreadsheets or word-processors. This data can then be used, for example, to provide data for a mail-merge via some other package, probably a word-processor.

It is possible to import data in a tab-separated form, but it needs to be in a very tightly determined format.

A useful facility is that *MailMaker* can type selected fields of a displayed record directly into another application. This is really handy for pasting an address into a letter, without needing to formally export the record, or for entering e-mail addresses or fax numbers into a dialogue box icon, for example.

Note, and the manual omits to mention this, if *MailMaker* is used for other than personal record keeping purposes its use might fall within the scope of the Data Protection Act which requires the data to be registered.



MemoMaker

This third Maker application stores notes as memos and keeps then in a predetermined priority order. An external file of any type can be associated with each memo and run from it. Curiously *MemoMaker* insists on its icon being the right most application icon on the iconbar.

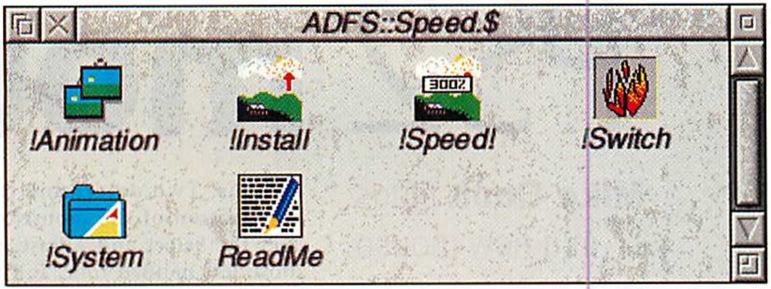
Memos can be exported or imported via TSV files, although it is worth noting that many RISC OS applications while handling TSV files do not recognise this type, and require them to be 'Text'. In these cases it is necessary to change the filetype via the Filer.

MemoMaker notes can be associated with diary items in *DateMaker* and address entries in *MailMaker* by links. This can be set so that selecting an entry in *MemoMaker* automatically displays the appropriate entry in the other application and selecting a linked entry in the other application will display the related memo. Naturally this requires the user to own both applications before records can be linked.

Conclusions

The Maker Series are low cost applications with limited functionality. They provide just the facilities that some users require which makes them well worth the money. For those who use Alarm but are frustrated by its lack of facilities *DateMaker* may be the answer. Personally I find *MailMaker* the most useful of the series. It is worth its price just for the ability to type part records into other applications – no more copying entries or having to formally export a file after looking up an address before sending a letter.

Speed!



Chris Jackson adds power without hardware

When I come across applications that claim to speed up my computer I am naturally dubious. Why would any company fail to make its computer run as fast as possible? Curiously I inserted *Speed!* from Clares into my floppy drive. An installation program booted up and asked for my name, address and phone number.

On typing these, the program installed a tailored version of *Speed!* The application recognised I owned a RiscPC and copied the module into my !Boot directory for automatic loading each time the computer was switched on – who could ask for an easier installation?

I didn't notice anything extra special about how my computer was performing so I ran the speed check test on the disc to see how much faster it was supposed to be running. The program reported a 1.8 times speed increase. The manual says it should be around three to five times on a RiscPC, but then again any increase is welcome.

What this utility does (as far as I can understand) is to stop RISC OS from copying programs around the memory as often as before, saving processor time.

Running my own test gave a more modest 1.6 times the speed increase. However, the manual states that when used with *Impression* the computer is considerably faster. The same applies to the PC Card when used in the desktop. When used out of the desktop no speed increase is achieved, as the computer is no longer multitasking.

Conclusion

I didn't notice any great increase in speed on my machine. Maybe that is because most of the applications I generally run are fairly well behaved and don't hog the processor.

There are a few utilities on the disc for testing and configuring *Speed!* on and off which I only used for testing purposes. After installing *Speed!* I left it to its own devices, which it did admirably.

The manual states the utility works best on a RiscPC. However, owners who intend to buy RISC OS 3.7 will find it of little value as it cannot be used on the latest generation OS. It has been stated on the computer message networks that this is because the fault has been rectified and the new operating system deals better with the copying of applications in memory.

Product details

Product: Speed!
Supplier: Clares Micro Supplies
Address: 98 Middlewich Road, Northwich, Cheshire, CW9 7DA
Tel: (01606) 48511
Fax: (01606) 48512
Price: £10 inc VAT per machine

Syquest EZ135



Chris Jackson tests out a backup system

Everyone knows it'll happen to them sooner or later, and it's always at the most inopportune time. I am, of course, talking about your hard disc 'crashing' and leaving you with megabytes (or even gigabytes) of information destroyed. I lost around 150Mb of information and decided to look around for some form of backup system.

I thought about a tape-streamer but then came across the Syquest EZ135, a cartridge system which runs at the speed of a slow hard disc and is similarly priced to a tape-streamer.

The drive came with everything I needed except a SCSI cable, which for some reason comes with the external SCSI but not the internal. A number of manuals were supplied for the fitting and use of the system which was fairly straight-forward. I only referred to it for the setting of the SCSI-ID number.

Cutting a hole in the RiscPC 3.5in slot was a major task. The plastic is very thick and I'd recommend a trip down to your dealer for that part of the installation unless you can afford to break a slice.

My Vertical Twist (now VTi) SCSI card recognised the drive but didn't want to format it. I had to use Hugo Fiennes' special public domain file system *MOFS* to access the drive. I've heard that other SCSI cards don't suffer this problem which would make installation even simpler. Using Hugo's program to format the drive was quick and easy and I could access it straight away.

Running a speed check, copying an 8Mb Replay file from the RAM disc to the EZ135 and to my 210Mb Conner gives 1.48Mb/sec for the EZ and 1.1Mb/sec for the 210Mb IDE drive. This just shows how quick the drive is.

Conclusion

The drive is much faster than I thought it would be and is very useful for storing large files. I've used it once or twice for porting large files over to other computers which is much quicker than when modem or using floppies.

One disappointment of using the drive on the Acorn is that IDE format discs are unreadable on the SCSI drive as the formats are different. Also Acorn format SCSIs won't be readable on PCs. However, using special software on the Acorn allows PC cartridges to be read.

Overall I thought the drive was a good solution for mass backup and would definitely recommend it.

Product details

Product: Syquest EZ-135
Price: £89 + VAT
Product: EZ-135 cartridges
Price: £14 + VAT
Supplier: Syquest Technology Limited
Address: Spitfire House, Edinburgh Airport Cargo Village, Turnhouse Road, Edinburgh, EH12 0AL
Tel: 0131-339 2022
Fax: 0131-339 6765

PS2 mouse

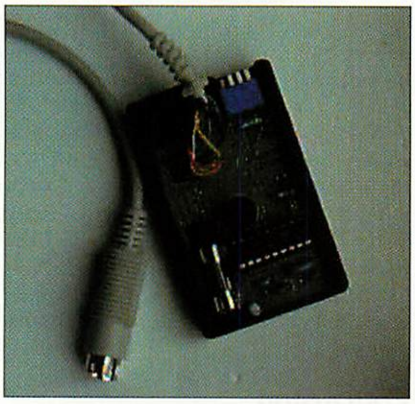
Mike Cook plugs in a new mouse

Stuart Tyrrell has come up with another indispensable interface – the PS2Mouse. It allows the use of PS/2 compatible mice with Acorn machines, which means both cheap replacements and the ability to use those fancy custom mice you see in PC shops.

Fitting is simplicity itself – unplug your mouse, plug in the box and plug your mouse into the box. It is advisable to do this when the machine is off. I think this is the best type of adaptor as it doesn't depend upon software and so is going to be compatible with everything.

Some PC mice have just two buttons but it's still possible to use these. Select and Adjust are the left and right buttons respectively and the menu button is invoked by pressing the two simultaneously.

At the rear of the interface box are four miniature switches for controlling options. Two determine the rate of acceleration of the mouse, one swaps over the Select and Adjust, perfect for those left handed folk, and the fourth



controls the tap clicks. This is for mouse pads such as the Alps Glidepoint where the user controls the mouse by dragging their finger across the pad and a tap of the finger can be interpreted as a click or double-click.

It's an interface that works quietly in the background. It worked successfully with the mouse I tried but it's impossible to say that it will be compatible with every mouse available. Stuart does operate an 'if it can't be made to work you can have your money back' guarantee, which is more than fair.

The secret of the interface is revealed if you open it up, it contains a single IC, a microprocessor. He uses a single chip computer system to do all the signal processing. The PS2Mouse is well made and could just be the answer to your problems.

Product details

Product: PC mouse to Acorn interface
Requirements: Any system
Produced by: Stuart Tyrrell Developments
Address: PO Box 183, Oldham, OL2 8FB
E-mail: info@stdevel.demon.co.uk
Tel: 0976 255 256 (Orange)
Price: £24.99 inc. P&P

Mail Order

Tel: 01924 254800 Fax: 01924 258036
E.Mail: sales@davyn.demon.co.uk

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Armadeus Sale	(Clares)	£25.00a
ArtWorks	(CC)	£99.00c
C++	(Acorn)	£249.00c
Card Shop	(Clares)	£22.00a
Celebration	(Clares)	£32.00a
The Comp.Animator	(Iota)	£93.00b
Composition	(Clares)	£150.00c
Compression	(CC)	£31.00a
DataPower	(Iota)	£99.00c
Desktop Thesaurus	(R Dev)	£19.00a

Davyn Softwa

Draw to DXF Converter
NEW Only £23.00a

DXF

Draw Works2 NEW	(iSV)	£17.00a
Easy Clip	(Fabis)	£31.00a
Easy Font 3	(Fabis)	£31.00a
Eidoscope (RiscPC only)	(CC)	£170.00b
Eureka 3	(LL)	£104.00c
Formulix	(CC)	£70.00a
Font FX	(Datastore)	£12.00a
Frame-It 1 or 2 *Publisher irregular frames*	(Davyn)each	£6.00a
Graphics Loaders	(CC)	£44.00a
Illusionist	(Clares)	£45.00a
Image FS 2	(Alternative P)	£41.00a
Image Outliner	(Iota)	£54.00a
Impression Publisher	(CC)	£139.00c
Impression Style	(CC)	£79.00c
Intertalk	(Acorn)	£92.00c
Knowledge Organiser 2	(Clare)	£72.00a
Notate	(LL)	£62.00b
PC PRO (!PCx86 V.2) NEW	(ANT)	£45.00a
Pendown Etoiles	(LL)	£58.00c
Pendown Plus	(LL)	£83.00c
Personal Accounts	(Apricote)	£40.00b
PhotoDesk 2	(Space Tech)	£259.00c
Pinpoint	(Longman)	£104.00c
Pro Artisan 2	(Clares)	£135.00a
Pro Artisan 24	(Clares)	£99.00c
Prophet 3 Accounts NEW	(Apricote)	£TBA.00c
Render Bender v2	(Clares)	£45.00a
Replay Starter Kit	(Acorn)	£40.00b
Revelation ImagePro	(LL)	£163.00c
Rhapsody 3	(Clares)	£93.00a
Rhythm Bed	(Clares)	£45.00a

RiscCad Professional

S/U	(Davyn)	£250.00c
Education		£200.00c
Site Licence		£581.62c
Serenade	(Clares)	£93.00a
ShapeFX	(Datastore)	£12.00a
Sibelius 6 (v3)	(Sibe)	£179.00c
Sibelius 7 Prof. (v3)	(Sibe)	£899.00d
Sibelius 7 Student (v3)	(Sibe)	£499.00d
SmArt	(4Mation)	£41.00a
SmArt Files	(4Mation)each	£17.00a
SmArt File Mod.Lang.	(4Mation)	£21.00a
Snippet	(4Mation)	£38.00a
Sound FX Maker	(CIS)	£39.00a
Termite Internet	(DoggySoft)	£89.00c
TextEase	(SoftEase)	£54.00a
TextEase Talking	(SoftEase)	£74.00a
TimeCode	(ART)	£29.00a
Titler	(Clares)	£93.00a
Topographer	(Clares)	£73.00a
Touch Type	(Iota)	£45.00b
Turbo Driver	(CC)	£51.00b
Twain Drivers	(DP)	£19.00a

Education Software

10 out of 10 Full Range Each £14.00a
Dinosaurs, Driving Test, Early Essentials, English, Ess.Maths, Ess.Science, French, German, Jr.Essentials, Math Algebra, Math Geometry, Maths Number, Math Statistics, Stuct.Spelling.

Adventure Playground	(Storm)	£21.00a
Amazing Maths	(CSH)	£22.00a
Amazing Ollie	(Storm)	£15.00a
Arcventure I Romans	(Sher)	£38.00a
Arcventure II Egyptians	(Sher)	£38.00a
Arcventure III Vikings	(Sher)	£38.00a
Arcventure IV A Saxons	(Sher)	£38.00a
Around World 80 Days	(Sher)	£49.00a
Aztecs	(Sher)	£48.00a
BadgerTrails	(Sher)	£48.00b
Balloons and Zoo	(Topo)	£21.00a
BodyWise	(Sher)	£48.00a
Calabash Pirates	(Storm)	£25.00a
Coffee	(Storm)	£29.00a
Connections	(Sher)	£34.00a
Crystal Rain Forest	(Sher)	£48.00a
Crystal Rain Forest II	(Sher)	£48.00a
Darryl the Dragon	(4Mat)	£21.00a
DataGraph	(Topo)	£30.00a
Farm	(Sher)	£22.00a
First Logo	(LL)	£25.00a
First Page DTP	(LL)	£53.00a
Flossy The Frog	(4Mat)	£26.00a
Flight Path 9+	(Storm)	£31.00a
Freddy Teddy	(Topo)	£15.00a
Freddy Teddy's Adv	(Topo)	£15.00a
Fun School 3/4 (5,5-7,7+) each		£20.00a

(Please Specify age group)

Granny's Garden	(4Mat)	£26.00a
Happy Life	(CCS)	£31.00c
James Pond running water		£29.00a
Landmarks full range	(LL)each	£28.00a
Look Here Talking Topics	(Sh)	£61.00b
Magpie	(LL)	£62.00b
Maths Circus	(4Mat)	£29.00a
MathsMania	(Topo)	£25.00a
Music Box	(Topo)	£35.00a
Naughty Stories V1 or 2	(Sher)	£58.00b
Number Tiles	(Topo)	£25.00a
Ollie Octopus Sk Pad	(Storm)	£16.00a
Oxford Reading Tree Stage 2		
Talking Stories	(Sher)	£45.00b
More Talking Stories A	(Sher)	£45.00b
Oxford Reading Tree Stage 3		
Talking Stories	(Sher)	£45.00b
Oxford Talking Infant Atlas		£21.00a
PinPoint Junior	(LL)	£31.00a
PlantWise	(Sher)	£49.00a
Rosie & Jim Duck	(Sher)	£11.50a
Rosie & Jim Sneezes	(Sher)	£11.50a
ScreenTurtle	(Topo)	£35.00a
Sea Rescue	(Sher)	£29.00a
Selladore Tales	(Sher)	£26.00a
Smudge the Spaniel	(Storm)	£19.00a
Smudge the Scientist	(Storm)	£42.00a
Smudge Punctuates	(Storm)	£TB.Aa
Space City	(Sher)	£31.00a
Splash	(Sher)	£22.00a
Stig of the Dump	(Sher)	£26.00a
Story Starts	(Sher)	£26.00a
Talking Clock	(Topo)	£35.00a
Talking Animated Alphabet		£32.00a
Talking rhymes1	(Topo)	£26.00a
The Playground	(Topo)	£25.00a
The Puddle & Wardrobe	(Topo)	£20.00a
Time Detectives	(Sher)	£49.00a
TinyDraw/Logo	(Topo)	£25.00a
TinyPuzzle	(Topo)	£20.00a
Teddy Bear's Picnic	(Sher)	£31.00a
Voyage of Discovery	(Sher)	£38.00a
Worst Witch	(Sher)	£29.00a

Games Software

Alderbaran Sale	(Evolution)	£10.00a
Alone in the Dark Sale	(Krisalis)	£25.00a
Arcturus	(Oragan)	£22.00a
Aries *4games*	(GamesWare)	£25.00a
Anagram Genius	(4D)	£27.00a
Big Bang	(Psycore)	£14.00a
Black Angel	(4D)	£28.00a
Boxing Manager Sale	(Krisalis)	£5.00a
Burn Out	(Oragan)	£23.00a
Cannon Fodder	(Krisalis)	£23.00a
Chuck Rock	(Krisalis)	£10.00a
Cobalt Seed	(TBA)	£21.00a
Crystal Maze	(Sher)	£27.00a
Cyber Ape	(TBA)	£17.00a
Cyber Chess	(4D)	£28.00a
Darkwood	(Eclipse)	£22.00a
Dune2	(Eclipse)	£32.00a
Dune2 CD	(Eclipse)	£45.00a
Dungeon	(4D) 2mb	£29.00a
Empire Soccer	(Empire)	£23.00a
Enter The Realm	(4D) 2mb	£21.00a
E-Type Compendium	(4D)	£22.00a
E-Type Jaguar 2		£29.00a
Fire & Ice		£21.00a
Flashback	(US Gold)	£25.00a
F.T.T. Sale	(TBA)	£17.00a
Global Effect	(Eclipse)	£32.00a
Gods	(Krisalis)	£10.00a
Haunted House	(4D) 2mb	£22.00a
Heimdall Sale	(Krisalis)	£15.00a
Hero Quest Sale	(Krisalis)	£15.00a
Holed Out Compendium	(4D)	£21.00a
James Pond	(Krisalis)	£10.00a
James Pond 2 RoboCod	(G/W)	£20.00a
James Pond running water		£29.00a
Krisalis Collection Sale	(Krisalis)	£19.00a
Lemmings	(Krisalis)	£19.00a
Lemmings Oh No More Sale	(Krisalis)	£15.00a
Magic Pockets Sale	(Renagade)	£15.00a
Man United Europe	(Kris)	£10.00a
Populus Sale	(Krisalis)	£25.00a
Quest for Gold Sale	(Krisalis)	£5.00a
Revolver	(Psycore)	£14.00a
Real McCoy 2 *(Apocalypse, Holed Out, Olympics, Inertia)*	(4D)	£29.00a
Real McCoy 3 *(PowerBand, Nevryon, Drop Ship, The Wimp Game)*	(4D)	£29.00a
Real McCoy 4 *(Galactic Dan, Grievousbodily'Arm, X-Fire,Cataclysm)*	(4D)	£29.00a
Sally & Wally Sale	(Oragan)	£15.00a
Saloon Cars Delux	(4D)	£29.00a
Scrabble	(US Gold)	£25.00a
SimCity	(Krisalis)	£26.00a
SimCity 2000	(Kris)A5000/PC	£33.00a
Simon The Sorcerer	(G/W)	£35.00a
Simon The Sorcerer CD	(G/W)	£41.00a
Small Sale	(Virgo)	£15.00a
Speedball Sale	(Krisalis)	£15.00a
Spobbleoid Sale	(Cybernation)	£5.00a
Spobbleoid Fantasy	(4D)	£27.00a
Starfighter 3000	(Fednet)	£25.00a
Stereoworld	(4D)	£27.00a
Stunt Racer 2000	(4D)	£29.00a
Swiv	(Krisalis)	£10.00a
Time Machine	(4D)	£23.00a
Virtual Golf	(4D) 2mb	£29.00a
Virtual Golf augusta course	(4D)	£20.00a
Zool 1.6m disk Sale	(AP)	£8.00a
GamesPad 2player	(G/W)	£33.00b

Special Clearance Offers

subject to availability

5.25 40t bare disc drive		£19.00c
8bit User Analogue Interface		£23.00b
A Mouse in Holland	(EY)	£20.00a
Doris the Dotty Dog	(EY)	£10.00a
Flossy the Frog	(EY)	£20.00a
Gemini	(EY)	£10.00a
Polyominoes	(Topo)	£25.00a
Podd	(ESM)	£15.00a
Prime Mover	(Minerva)	£30.00a
Pro Driver	(Ace)	£15.00a
StartWrite	(AP)	£8.00a
StartWrite Talking	(EY)	£15.00a
Waiter	(Digital)	£15.00a
Word Works	(CC)	£15.00a
S/U 2m A3010 inc Action Pack		£190.00d
New & Used Acorn Spares		£ ring

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E.&.O.E 08-11-96

Does it **work?**

Martin Friar has been compiling a list of StrongARM compatible software

The advance orders have been honoured, the Acorn World show is over, and a great number of StrongARM processors have now found their way into machines around the world.

Not surprisingly, StrongARM has been a hot topic for debate in the internet newsgroups throughout the summer, and this intensified as processors starting dropping through letterboxes. A change of such epic proportions is bound to cause some incompatibility problems.

The Clan offer meant that many enthusiasts had StrongARM processors before developers, and, while this was welcome in the main, it meant that many of the smaller developers and PD authors, who had not had the opportunity to visit Acorn House, were playing catch up in order to make their wares compatible.

Although many programs ran without alteration, there was a clear demand from the on-line community for an interactive StrongARM compatibility list, where users could report the results of their own trials, involving obscure as well as mainstream software, with as many versions tested as possible – in the case of chargeable upgrades, does the old version work?

As it stands, the list gives testimony to the adaptable nature of the companies/individuals in the Acorn marketplace – very few pieces of software are still totally unable to run. In addition, the ARM Club launched *StrongGuard* at the Acorn World show, which should help some of the older software to run, in a similar way that *!GameOn* helped pre-Risc PC software continue to be used.

Unfortunately, due to the nature of the list, we cannot guarantee accuracy though we're fairly confident the entries are correct.

PROGRAM	VERSION	WORKS?	NOTES
16 bit Parallel I/O	1.03	YES	
24i16 (Irlam)		YES	
6502Em	1.5	YES	
65Host		NO	
65Tube	0.64	YES	
Acorn SCSI	2.10	NO	Causes Abort on Data Transfer at start up
Advance	1.01	YES	Apply patch available from ART
Advantage	1.00d	YES	
ANT Internet Suite 2	1.1	YES	
+ARCPPP	0.56		All components work perfectly
ANT NIC/EtherB	4.23	YES	Atomwide will Email new module
Apollonius PDT	1.21	YES	
AppDock2	2.41	YES	Can be persuaded to crash
ArcBinkley	2.19	YES	
ArcFax	1.13	NO	Get upgrade from David Pilling
ArcFax	1.16	YES	
ArcFS	0.73a	YES	Supplied on SA CD ROM
ArcFS r/w	2.24	NO	Nasty side effects.
ArcFS r/w	2.56	YES	New SA-Aware version produced from VTi
Archimedes Disc Rescue		YES	
ArchiTech		YES	
Archmail	1.36	YES	
ArcScan	0.74	YES	
Arcterm 7	1.48	YES	
ArcTrack	1.67	YES	AOS/LOS recalc x10 faster than 610
ArcWeb	1.63	YES	
ArcSimp		YES	Very fast
Armadeus		YES	
ArmBBS	0.68	YES	
ARMed'96 Demo	All	YES	Occasional problems from QTM music player
ARMEdit	1.01	NO	
ARMEdit	1.02	YES	
ARMEdit	1.03	YES	Currently in beta, but works fine
ARPlayer	1.29	YES	Supplied with StrongArm
Artworks		NO	Upgrade available from Computer Concepts
Artworks	1.7	YES	
ARXE SCSI Card	0.89	NO	
ARXE SCSI Card	1.00/01	YES	Use 12MHz PALset
ATAPI 4X CDR Drive		YES	
AXIS		YES	Flickers slightly
Audioworks	1.47	YES	Crashes occasionally. V1.53 available from CC
Autoload	0.02	NO	
BarCoder	1.05	YES	
BlackHole 2	3.78	YES	Quick Screensavers!
Blinds	1.21	YES	
Bioryhthms	1.72	YES	
Bombz	1.11	YES	BombzDes also seems OK
C/C++ (Acorn)		YES	
Cadmust	Project	NO	Lindis have no plans to update it
Castle SCSI 2		YES	
CDFast	1.05	YES	
CDFix	1.50	NO	Incompatible with CDFS in 3.7
CDFix	1.51	YES	Upgrade from Robin Watts
CDNet client		YES	
CDNet server		?	Not tested
CDTracker	3.05	YES	
CDTracker+	4.02	YES	
Chameleon	2.00	NO	No plans for an upgrade
ChangeFSI	1.15	YES	It's quick!
ChartWell	1.10	NO	
Chess	1.29	YES	
Chess II	2.06	YES	
Chroma Genlock CG6		YES	
ClicBack	2.99	YES	
Cobalt Seed	1.00+	YES	
Colour Card (CC)		NO	No upgrade
Compo	1.02	NO	Upgrade available from Clares
Compo	1.03	YES	
Compression	1.17	YES	
Conductor		NO	
Config+	1.00	YES	
Connect32 SCSI	1.81	?	Few bugs - working on 100% SA version
Convert	2.00	YES	
CoolSwitch	1.05	YES	Occasional crashes when using Zap CMode
Creator	2.00	YES	Supplied on SA CD ROM
Credits	3.27	YES	Untested creating database
Cron	1.15	YES	
CurlBack	1.02	YES	Better than PinBoard
Cyber Chess	1.24	YES	Turn cache off when loading
D2Font	1.08	YES	
DataPower	1.24	YES	Smooth & Fast
Da Vinci 90	YES		
DeskEdit	4.01	YES	
Desktop Tracker	1.21	YES	When patched with AppCompPatch*
DiagramIt	1.10f	YES	
Digital Symphony		YES	Turn cache off when loading & then on again
Director	0.21	YES	
Director	0.22	YES	
Directory Menu	2.22	YES	
Disc Commander	1.25	YES	
DiscEd	1.07	YES	
DiscSpace	1.09	NO	Author says it's easy to fix
DiscSpace	1.11	YES	
Dismounter	0.05	NO	
Dissi	8/1/92	NO	
Dual Serial Interface	3.72	YES	Intelligent Interfaces
Dual Serial Port issue 3	0.40	YES	
Dune II	1.30	NO	

PROGRAM	VERSION	WORKS?	NOTES
EagleM2 Card		NO	Locks on startup
EasiWriter	3.16	YES	
Easy C++		NO	OK when using command line
Easy Money	1.01	NO	Patch from Meadow Computers
EasyClip		NO	Upgrade from Fabis
Easyfont	3.1	NO	
Easyfont	3.17	NO	Fails to load - must upgrade to Easyfont Pro
Easyfont Pro	4.02	YES	
Easyfont Pro	4.03	YES	
Easywriter	3.16	YES	
Enterprise Accounts	2.17	NO	Patch from Meadow Computers
Enterprise Professional	2.17	NO	Patch from Meadow Computers
Equasor	?	NO	In publisher upgrade?
Euclid		YES	
Eureka	3.00	YES	
Eureka	3.05	YES	Free upgrade. Screen update much improved
FEMS	2.3	YES	
FireWorkz	1.24	?	Works well, but sometimes hangs on loading
FireWorkz Pro	1.20	YES	
FireWorkz Pro	1.22	YES	Crashes occasionally when loading files
First Logo	1.99	YES	
Floating Clock	2.08	YES	
FontDir2	2.01	YES	Very smooth and fast, new version 2.10
FontEd	0.29	NO	It's on SA CD ROM
FontFS	2.00	YES	
FontFX	5.07	YES	
FormEd287	2.87	YES	
FormText	1.04	YES	
Formulix		YES	
Fortran 77		YES	
Fractal	0.29	YES	Fast!
FreeMem	1.11	YES	Available from Liquid Silicon
FreeNet	1.02	YES	
FreeNews	1.02	YES	Greatly increased download speed
FreeSMTP	1.16	YES	
FreeSMTP	1.17	YES	
FreeSMTP	1.18	YES	
FreeTerm	1.20	YES	Occasional crashes/aborts but mainly OK
Fsck	1.31d	YES	
FTT	1.00+	YES	
FuelGauge	0.06	YES	
FYEO2	2.02	YES	
Gameboy	0.43	YES?	Required fix from http://www.chubb.demon.co.uk/Dave/
Gnuplot	3.5	YES	
Graphics Loaders (CC)	YES		
GraphMate	1.10c	YES	
Greyhawk		YES	
Guardians o/t Greenwood	1.00	NO	
Gyrinus2	3.6	YES	
Hardbac	2.01	NO	New verion under development
HatchBack	1.01	YES	
Hawk V9		NO	No upgrade (but some appear to work)
Hearsay	2.19	NO	
Hearsay	2.20	YES	Upgrade from Beebug for a tenner!
HolyBible	1.37	YES	
Hourglass	1.01	YES	
IDEFS (ICS)		YES	
IEEE488 Interface	1.04	YES	
Illusionist		YES	
ImageBank	0.57	NO	
ImageBank	0.58	NO	
ImageFS	2.00	NO	Fix available from Alternative Publishing
ImageFS	2.30	YES	
ImageMaster	1.06	YES	
ImageMaster	1.07	YES	
Image Outliner	1.00	YES	Very Fast
ImpChars	2.00P	YES	
Impression Junior	1.19	YES	
Impression Style	3.07	YES	
Impression Publisher	4.08	NO	Upgrade available from Computer Concepts
Impression Publisher	4.09	YES?	Seems ok, but CC say it's unstable
Impression Publisher	4.11	YES	
Insight	1.67	YES	
InterTalk	2.60	YES	
Investigator (VTi)	any	NO	No upgrade planned
Karma	1.05	YES	Fast!
Keystroke	2.30	NO	Upgrade available from Quantumsoft
Keystroke	4.00	YES	
Killer	2.401	YES	

PROGRAM	VERSION	WORKS?	NOTES
LabelBase	1.38	YES	
"Landmarks" series		YES	
Larger	2.11e	YES	
Lark Card (CC)		YES	
LaserDirect	2.91	YES	Very old version
LinEd	1.02	YES	
LineEditor	1.07	YES	
LineEditor	2.67	YES	
LockDir	1.00	YES	
LongFilenames	0.10	YES	
"Look and Read" series	1.02	YES	Longman Logotron
Lottery	1.16a	YES	
Lunch	0.33	YES	
MacFS & MacFS Light		NO	Upgrades available from CC
MacroLife	1.70	YES	Runs very fast
MakeARiscPC	1.00	YES	
MakeModes	0.19	YES	
Masterfile 3	1.37	YES	
MemFS	2.08	NO	Brian enigmatic about fixing it
Memoriser	1.00	YES	
Memphis	2.10	YES	Under test
Menu Bar	1.00	YES	Occasional crashes
Messenger	0.27	YES	Much Faster
Midi Max		YES	
MidiSynth	?	NO	Upgrade available soon
Mirror Image	1.00+	YES	
Montage		YES	Even faster rendering
MOS 6581	0.8b	YES	
MOS 6581	0.9	YES	
Movie Magic (CC)		NO	Upgrade available from CC
MovieFS	1.22	YES	
Mozart Sounnd Card	1.0	YES	
Multistore	2.0	YES	Very fast sort
Music Scribe	3.43	YES	
Neko		YES	
Nethack	3.1.3	NO	Loader falls over
Newerlook	2.03	?	Some modules don't work
Newsbase	0.54n	YES	Rips through mail!
Newsbase	0.56	YES	It really churns through the expiry phase
Newsbase	0.56a	?	Flakey when loading, seems OK
NightSky		YES	
Numbertime	1.03	YES	
Oak SCSI	1.36	YES	Free wipes out FileCore and Free module
Omar S Bridge		NO	
OmniClient		YES	
OpenFiles	1.03	YES	
Optical Pro Ntn	4.22	YES	Very Fast
Optima	3.233	YES	
Orrery	1.40	YES	Only in non-square pixel modes
Oscar 4X Parallel CDR drive		YES	
Ovation	1.41s	YES	
Ovation Pro	2.26	YES	Switch off cache when loading, then switch on
Ovation Pro	2.36	YES	Installer problems solved - works brilliantly
Panorama	1.12	YES	
PC	1.995	YES	
PCPro	2.02	YES	
PDTracker	4.52	YES	Crashes if it loads MatrixTrackers
Pendown	1.82	YES	Also 1.82T works
Pendown DTP	1.00i	YES	
Personal Accounts	3	YES	
Personal Accounts	3.54	YES	Amazingly quick
Photodesk	1.22	YES	Quick and smooth
Photodesk 2	2.04	YES	Amazingly fast
Phototouch	1.19	YES	Turn cache off to load, then turn on
PhotoView	0.10	YES	Supplied on SA floppy
Picture Book	2.00	YES	
PicturePoint	1.03	YES	
PinPoint and PP Junior	2.02c	YES	
Pipedream 3	3.11R	NO	Does work with cache off - slow
Pipedream 4	4.13	NO	
PixelPal	1.00	YES	
Playback	All	YES	
PocketFS	2.03	YES	Patch Supplied on StrongArm CD
POV2	?		Very fast, but crashes occasionally
POV3		NO	Renders sky but no a lot else!
Powerbase	6.84b	YES	
PowerTech SCSI		YES	
Powerwave xg50		YES	
ProArt2	1.20	YES	
ProArtisan24	1.02	YES	Turn cache off to load, then switch on (upgrade avail-

FEATURE

Does it **work?**

PROGRAM	VERSION	WORKS?	NOTES
able)			
Prophet	2	YES	5x Speed Increase
Projector	1.27	YES	
ProTeus		YES	
PtrWatch	1.00	YES	
QuickIRC	1.1	YES	
QuickLynk	1.04	YES	
QuickShow	1.00	YES	
QuickSound	1.00	YES	
QuickTile	1.03	YES	
Rainbow	1.0g	YES	
RapIDE ATAFS	0.95+	YES	Not earlier versions
RealCount	1.01	YES	
ReMIDI	0.57	YES	
Renamer	3.00	YES	
RenderBender	2	YES	
ReplayDIY		YES	
Resultz	1.04	YES	
ReTreeval	1.00a	YES	
Revolver		YES	
Rhapsody2	1.25	YES	
Rhapsody3	3.05	YES	
RhythmBed		YES	
RiscBSD	1.1	NO	Mark Brinicombe waiting for his SA
RiScript	2.02	YES	A lot faster
Risc TV		YES	
RSDFS	All	YES	Sometimes crashes on change of blockdriver
RTF Loaders (CC)		YES	
S-Base	2.40a	YES	
Sbase Developer	2.00	YES	Run time and compiled versions work
SaveDesk	1.00	YES	Works fine. Considerably quicker
ScanLight 256		YES	
ScanLight A4		YES	
ScanLight Video		YES	
Schema	1.03	YES	Very old version (new version available from Clares)
Scrabble	1.22	YES	
SCSI 1 (Cumana)		YES	
SCSI 2 (Cumana)	2.03	YES	Additional upgrade now available
SCSI II (Connect 32)	2.19	YES	
SCSI (Morley)	1.17	YES	Both cached and uncached versions
Secure3	3.1	YES	
Serenade		YES	Upgrade available from Clares
Sequencer		YES	
Shanghai	2.00	YES	Wynand Thompson version
Shares	5	YES	
ShiftKeys	0.02	YES	
Sibelius 6	3.02h	YES	Had to turn cache off while installing
Sibelius 7	3.04h	NO	Update available from Sibelius Software
SimCity2000		NO	No more time wasting
Sleuth	1.53	YES	
Sleuth 2	2.07	YES	
SlipDial	0.33	NO	
SlipDial	0.34	NO	
SlipDial	0.38	YES	
Smart		NO	No plans for upgrade
Smart CD+	2.01	YES	
Smart CD+	2.03	YES	
SmArt Suite		NO	
SmartFiler		NO	No plans for upgrade
Snapper	1.04	YES	
Softlinks	1.31	YES	Previous versions do not work
Sonor	1.02-6	YES	If patched with AppCompPatch*
SoundCon	1.6	YES	
Spark	2.23	YES	
SparkFS	1.13	NO	Upgrade available from David Pilling
SparkFS	1.28	YES	Latest version
Sparkplug	2.23	YES	Supplied on SA CD ROM
Speller	1.00	YES	
Spex+		YES	
Spheres of Chaos		YES	
Squirrel	2.08	YES	
StarFighter 3000	Demo	NO?	Too quick
StarFighter 3000	Full	NO	
STEbus Interface	1.10	YES	
StrongEd	4.12	YES	
Studio24	1.10	YES	Soon to be SA-enhanced, but works as it is
Studio24Pro	2.12	YES	Soon to be SA-enhanced, but works as it is
Studio24+Music	3	NO	Upgrade unlikely
SwiftJPEG	1.00	YES	Stunningly fast

PROGRAM	VERSION	WORKS?	NOTES
Tablemate	all	YES	
Tablemate Designer		YES	
Tabs+		YES	
TAG engine		YES	
TCJ	1.03	YES	When patched with AppCompPatch*
TCPIP (KA9Q)	2.05	YES	Turn off cache when loading
Techwriter	2.16	YES	Occasional crashes
Techwriter	2.19b	YES	Occasional crashes
Teletext+	6.3	YES	
TemplEd	1.29	YES	
TemplEd	1.30	NO	Locks machine while loading
TemplEd	1.31	NO	You can uncrunch it to make it work
Termite	1.22	NO	
Termite	1.22b16	YES	Very Fast
Termite	1.22b18	YES	Problems with Offlite & Blinds?
ThinkSheet	1.0	YES	Speedy & reliable
Titler		YES	
The Big Picture	1.09	YES	Free upgrade. Very fast, better air-brush
Thumbnail	1.30	NO	
Thumbnail	1.25	YES	Seems the older version is the one
Topographer		YES	
Trace	2.11	YES	
Trace	2.12	YES	
Trash	1.30	YES	Module task by Richard K Lloyd 1990
TrueANSI	1.26	NO	
TTFN	0.36	YES	
Turbodrivers	4.02	NO,	upgrade from Computer Concepts
TV Tuner (CC)		YES	
TV Tuner + Teletext (CC)		YES	
Twain	1.05	YES	
Typefind	2.01	NO	
TypeStudio	1.56	YES	
TypeTutor	2.03	YES	
Ulimate Expansion System	1.0	NO	HCCS don't know why
UnHTML	1.15	YES	
UniqueID		YES	
UUCoder	1.22	YES	
Vector	1.10	YES	256 colour modes only
Videodesk		YES	
Virtualise	1.06	NO	
Virtualise	1.10	YES	
Vision (HCCS)		YES	Quick image processing
VoiceMail (VTi)	1.04	YES	When patched with AppCompPatch*
Voyager	1.10	YES	Needs fix - ftp from Argonet
VRView	1.00	YES	
VTi 16Bit Sound Card		YES	
VZap	1.23	YES	Paul Vigay's virus killer works fully
WasteBin	1.00	YES	
Webite	1.23	YES	Renders like a dream
WebGif2	2.00	NO	Locks machine solid when loading
WebGif2	2.30	YES	Available from Riscy Developments
WimpBar	1.18	YES	
WinEd	2.45	YES	
WinLogo	1.28	YES	
WinRisc Beta	1.20b	YES	Much faster
WordSquare	1.03	YES	
WordWorks	?	NO	Upgrade available from Computer Concepts
Wordz	1.02	YES	
!X		YES	
X-Files	0.56	YES	
Z80Em	1.2	YES	
Zap	1.31	YES	ZapMJE requires patch, HidePtr module fails
ZigZag (Anglo Saxons)	1.05	YES	

* VTi products compressed using proprietory AppComp need AppCompPatch from VTi to fix.

StrongARM Compatibility Contacts

ART Official Web Site: http://www.art.acorn.co.uk/
The StrongARM Pages: http://www.friar.demon.co.uk/acorn/
E-mail: martin@friar.demon.co.uk
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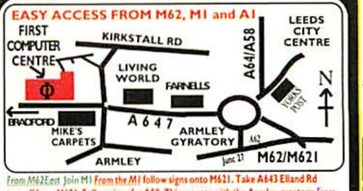
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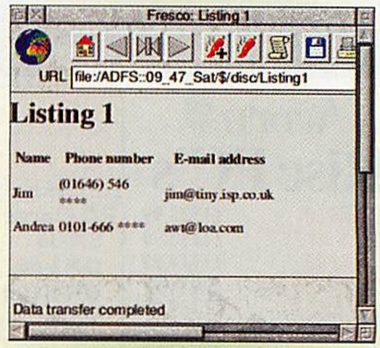
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HTML explained

FEATURE

turning the tables

Creating tables in HTML and using them for fancier mark-up is the subject of this month's tutorial by **David Matthewman**




```
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<tr>
  <th>Name</th>
  <th>Phone number</th>
  <th>E-mail address</th>
</tr>
<tr>
  <td>Jim</td>
  <td>(01646) 546 ***</td>
  <td>jim@tiny.isp.co.uk</td>
</tr>
<tr>
  <td>Andrea</td>
  <td>0171-666 ****</td>
  <td>awt@loa.com</a>
</tr>
</table>
```

Figure I: Listing 1 and its result in ***Fresco***

If you've done any amount of mark-up using HTML 2.0 – which is, broadly speaking, the HTML I have used up to now – you may have noticed a glaring omission. There's no satisfactory way to mark up tables. You can get part of the way there by using the **<pre></pre>** tag pair. This forces text into a monospaced font and you can manually line the characters into columns, but it's hardly elegant and doesn't allow regular mark-up inside the table.

One of the key HTML extensions proposed by W3C (the World Wide Web Consortium) is tables. Tables were proposed over a year ago and quickly incorporated into *Netscape Navigator*. Today, *Fresco* from ANT will display them, and nearly every commercial Web site uses them extensively. Some very complex effects can be achieved with tables but thankfully the basic idea is very simple. I'll start from this and build up to more complex mark-up later.

A simple table

To start with, consider the case of a simple table. Let's say I want to display various information about my friends; name, phone, e-mail and so on. I store each item in a table *cell*. Cells are joined together to make horizontal *rows* and rows are joined together to make a *table*.

Cells are of two types: *heading* and *data* cells. The difference is in what the cells are expected to contain – heading cells generally contain headings for the rows and data cells make up the rest of the table.

You're not forced to use them in any special order in a table, in fact heading cells can be at any point in a table, or there can be none at all. However, they are usually found on the first row if they are used. Typically a browser will center the text in a heading cell and make it bold type.

Heading cells are delimited by a **<th></th>** tag pair. Data cells are delimited by a **<td></td>** tag pair. These cells must be grouped in rows delimited by **<tr></tr>** tag pairs, and the rows themselves must occur inside a table, delimited by a **<table></table>** tag pair.

This simple hierarchy is at the heart of every HTML table: cells inside rows inside a table.

Figure I shows this applied to a very simple 3x3 table, with an associated screenshot. As you can see, the row of headings is centred and in bold type to distinguish it from the rest of the table.

What will display tables

Because tables aren't part of HTML 2.0 (although they are firmly in the new proposed standard HTML 3.2) they're not supported by a number of browsers. Part of the problem is that to implement tables properly a browser has to do a lot of very complicated parsing of HTML and make some intelligent decisions about page layout. As a result, many browsers that support a number of the simpler HTML extensions – such as colours and backgrounds – don't support tables.

Most significantly for Acorn owners, ArcWeb doesn't support them, and therefore nor does Voyager. Webster, the other free Acorn browser does support them after a fashion, but not very well. The only Acorn browser with good support for tables is ANT's Fresco, but it costs money. Nearly every other platform has a free browser available that supports tables: PC, Mac, Unix, Amiga. Until there's a free, table-aware browser for the Acorn, then a conscientious Web designer who knows that Acorn users will be visiting his or her pages should always provide a non-table alternative. Looking at a table-enhanced page with a non-table browser usually means the page looks a complete mess.

You might wonder why I'm spending such a long time on a feature that most Acorn browsers don't support. Well, tables are important and anyone designing a Web page should at least know how to use them.

Borders and colours

You might feel that this table would look better with a border round the cells. This is easily accomplished – put a **border** attribute in the **<table>** opening tag. Most browsers will draw this border right next to the text in the table. This can make the text hard to read so it is helpful to add a little padding between the border and the cell contents with the **cellpadding** attribute. Finally, the spacing between the cells can be increased with the **cellspacing** attribute.

All three attributes are given sizes in pixels, although in the case of **border** this is optional and it is more usually seen on its own, in which case the border size is implied to be 1. A typical **<table>** tag might therefore have:

```
<table border cellspacing=2 cell-
padding=4>
```

It is also possible to set the background colour of cells on a per-cell, per-row or per-table basis. This is done in a similar way to using the **bgcolor** attribute inside the **<body>** tag to set the background colour of the entire document. This was discussed in November's issue, but in case you missed it, here's a quick recap:

Colours are specified as #rrggbb, with rr, gg and bb being hexadecimal bytes representing the intensities of red, green and blue respectively. For instance, black is #000000, white is #ffffff and dark blue is #000099. The background colour is set using:

```
bgcolor="#rrggbb"
```

(note the US spelling of 'color' – it really matters).

These can be placed inside **<table>**, **<tr>**, **<td>** and **<th>** tags, with predictable results. Unfortunately, not every table-aware browser will take any notice of the colour attributes, including *Fresco*.

Figure II shows the results of giving the table a border, a white background and putting the headings on a red background. Each cell in the table also has four pixels of padding, making it easier to read.

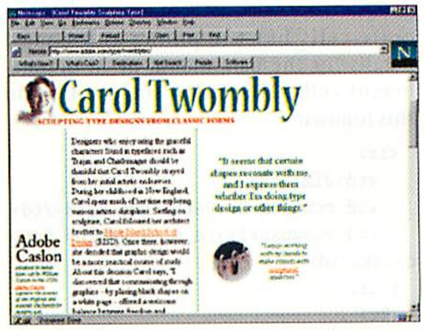
Alignment and sizing

The contents of cells can be aligned both vertically and horizontally. This is done using the **valign** (vertical) and **align** (horizontal) attributes and, as you would expect, it's pretty straightforward. The **valign** attribute can be either **top**, **middle** or **bottom**, and the **align** tag either **left**, **right** or **center**. Again, note the US spelling of 'center'.

Therefore, the contents of a cell aligned using:

```
<td align="left" valign="top"> …
</td>
```

would be left-aligned and at the top of the cell. These attributes can be applied to



This DTP-like layout was made possible by clever use of tables

cells (both data and heading) and also to rows. They can't be applied globally to the whole table as **align** attributes within the **<table>** tag itself align the whole table. As with images, a table using **align="left"** may allow text to flow down its right hand side while one using **align="right"** may allow text to flow down its left. In practice, not all browsers do this.

Usually a table is as wide as its widest row. You can affect this, however, by using the **width** attribute in the opening **<table>** tag. Width can be specified as a

The contents of cells can be aligned both vertically and horizontally. This is done using the valign (vertical) and align (horizontal) attributes, and, as you would expect, it's pretty straightforward

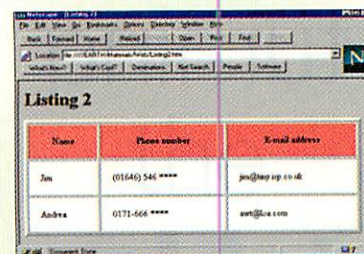
number of pixels or as a percentage of the screen width:

```
<table width=400>
<table width=100%>
```

In the first case, the table will be 400 pixels wide. In the second it will always be as wide as the screen; if the table would normally be smaller it is stretched to fit.

As you might expect, odd things can happen if a table is given a width that's smaller than is actually possible for the contents. This can happen easily if your table contains graphics and you should always check for it. Some sites use this effect to overlap graphics – not an effect that's possible using traditional HTML – but I don't advise it because what happens is very browser-dependent. You may simply end up with something that looks a mess.

One downside of using fixed-width tables is that they will stay that size even if




```
<table border cellpadding=4
bgcolor="#ffffff" text="#000000">
  <tr text="#700000">
    <th>Name</th>
    <th>Phone number</th>
    <th>E-mail address</th>
  </tr>
  <tr>
    <td>Jim</td>
    <td>(01646) 546 ****</td>
    <td>jim@tiny.isp.co.uk</td>
  </tr>
  <tr>
    <td>Andrea</td>
    <td>0171-666 ****</td>
    <td>awt@loa.com</a>
  </tr>
  </table>
```

Figire II: Listing 2 in *Netscape Navigator* on a PC – Acorn browsers can't do this yet

the window is smaller; they will flow off the edge of the window, making them hard to read.

For this reason avoid fixed-width tables larger than around 600 pixels if possible; this caters for browsing full-screen on a 640 x 480 screen and in a smaller window on an 800 x 600 screen.

Joining cells

Different columns within a table may have different widths, and different rows may have different heights. However, all the cells in a particular column are the same width and all the cells in a particular row are the same height.

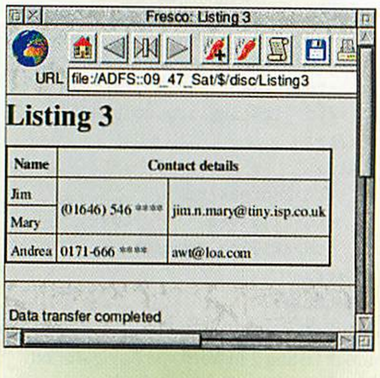
There can be situations where we'd like to change this. In our example of a small address book, we might want to change the first row into two headings: 'name' and 'contact details'. The contact details heading would cover both the phone and e-mail columns.

This can be done using the **colspan** attribute in the **<td>** or **<th>** tag. This says how many columns we'd like the cell to span. The HTML fragment for the first row of the table becomes:

```
<tr>
  <th>Name</th>
  <th colspan=2>Contact details</th>
</tr>
```

There are only two cells in this row

turning the tables




```
<table width=600 border=4
cellspacing=4 bgcolor="#ffffff">
  <tr bgcolor="#ff6666">
    <th>Name</th>
    <th>Phone number</th>
    <th>E-mail address</th>
  </tr>
  <tr>
    <td>Jim</td>
    <td>(01646) 546 ****</td>
    <td>jim@tiny.isp.co.uk</td>
  </tr>
  <tr>
    <td>Andrea</td>
    <td>0171-666 ****</td>
    <td>awt@loa.com</a>
  </tr>
</table>
```

Figure III: Listing 3 displayed in *Fresco*

although the table itself is three columns wide. This is because the second cell is itself two columns wide, so adding a third cell in this row would make the table four columns wide.

This is almost a statement of the obvious because the cells are all on the one line. However, cells can be made to span multiple rows with the **rowspan** attribute, and here you do have to start being careful.

Say that Jim shared a phone and an e-mail account with Mary. You might decide that Jim and Mary should be in separate cells but the phone and e-mail details for the pair should be in double-height cells. The HTML fragment to do this follows:

```
<tr>
  <td>Jim</td>
  <td rowspan=2>(0646) 546 2548</td>
  <td rowspan=2>jim.n.mary@tiny.isp.
co.uk</td>
</tr>
<tr>
  <td>Mary</td>
</tr>
```

But hang on – that second row only has one cell. Well yes, because the other two cells in that row are actually defined in the row above as double-height cells. As you can see this is a lot harder to spot than cells spanning multiple columns and you can find yourself being tripped up easily.

One tip to avoid this is to always give your table a border when designing it. That way any misplaced cells can be spotted easily, and the border can be removed again when happy with the design of the table. By combining **colspan** and **rowspan** attributes it's easy to accidentally create a table with overlapping cells. This would happen in the example above, if I'd written:

```
<td colspan=2>Mary</td>
```

Avoid this at all costs. You might be able to create a neat effect on a particular browser by doing this but it's certain that other browsers will display something completely different.

Listing 3 gives the altered table which can also be seen in Figure III.

Tables for layout

Well, that's the friendly, 'nice cop' image of tables out of the way. Now hold on to your keyboards for the scary stuff.

The cells of our tables so far have contained only plain text. However, cells can contain far more than this. Any HTML mark-up that can be used within the **<body></body>** tag pair in a document can be used in a table cell. Try thinking of a cell as a 'mini' Web page that can contain anything a Web page can, including other tables.

Remember that the size of the browser window in which your HTML is going to be viewed in cannot be controlled. Web publishing is *not* desktop publishing; you are not designing for a fixed page size here.

Tables cope very well with this if their widths aren't fixed because most browsers will re-flow the table depending upon the screen size available. On a wide screen the tables will be wide; if the screen is narrow the tables will be too. Tables allow objects to be positioned relative to each other on the page and have them displayed sensibly when the page is re-sized – something that is awkward with traditional HTML.

By having a table with two cells full of text, you can even have a two-column page (the only restriction is that it is not possible to make the text flow automatically from one column to the next, but that really *is* asking for a lot).

It's a lot scarier than that, though. If the width of the table is fixed and a few strategically placed transparent GIFs are included to pad the columns out then the layout of your page is practically dictated so that it appears how you want it.

The trick is to divide your page up into rectangles and implement each one as a table cell.

You may need to use many nested tables, and the result never looks *exactly*

> **Remember that the size of the browser window in which your HTML is going to be viewed cannot be controlled. Web publishing is not desktop publishing; you are not designing a fixed page size here**

the same on different browsers but it's astonishing what can be achieved if you set your mind to it.

It's not necessarily a good thing to misuse tables in this way. One of the fundamental principles of HTML is that it is text 'marked up' to give it a richer meaning.

If it is marked up to look pretty on screen your HTML ends up cluttered with numerous table-related tags that don't help you understand the *meaning* of the text at all.

The other problem is that tables aren't very backwards-compatible. A page that uses tables will often look a mess when viewed on a non-table browser; this can be many times worse if the table in question was being used to keep text of a left-hand margin.

If you do use tables for layout, spare a thought for *ArcWeb* users and keep a copy of the site that doesn't use tables, even if it isn't as elegant.

• *Next month I'll take a break from writing about HTML to look at some of the key software tools for Web developers on the Acorn that have sprung up over the past few months.* AU

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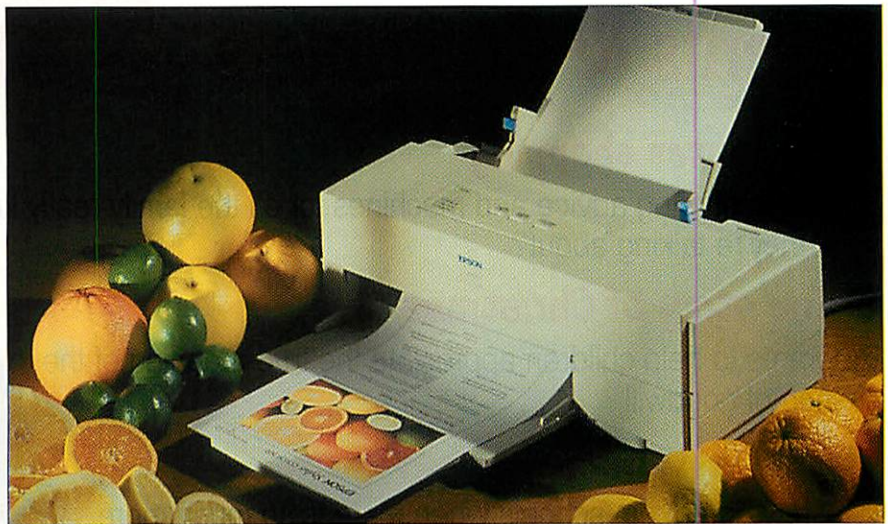
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Ian Burley looks at the Epson Stylus Color 500 printer



Piezo-electric printing

A reviewer must endure all manner of good and bad products to evaluate, but occasionally something really interesting arrives for examination and one such product is Epson's latest colour ink-jet printer, the Epson Stylus Color 500.

Pioneering technology

Epson has pioneered piezo-electric ink-jet print head technology and has used this technology to establish a resolution lead over conventional bubble ink-jet technology. The latter heat up ink nozzles very quickly to vaporise the ink into a jet or tiny bubbles which condense on the paper.

The piezo-electric effect is used by Epson to squeeze the nozzles containing the ink to produce the ink-jet. Epson claims piezo-electric heads can enable finer resolutions and faster print speeds, plus they don't wear out as quickly. Epson has pioneered 720dpi ink-jet resolution printing with its piezo-electric heads.

Print quality

The Epson Stylus Color 500 is a third-generation Epson colour inkjet printer. New inks are claimed to improve quality and speed drying. The Color 500 is a true four colour printer – it uses a real black as well as three primary base colours. Like most other ink-jets in its mid-price range, the colour inks are contained in one cartridge, so if you use one colour more than the others, you will have to replace the whole cartridge and waste remaining ink in the other two reservoirs.

Print quality can be very good, with neutral colours which are – if anything – slightly light in the default settings. I say 'can' be good, because many testers have expressed disappointment in the Color 500s' lower resolution draft mode printing.

Having used it for a while now, I'd agree, but this is a model of exceptional performance in full-colour high-resolution mode and it produces the best plain paper printing in 720dpi mode I've yet seen from an ink-jet.

Epson claims the Stylus 500 can print true 720dpi on plain paper. There is some merit in this claim – compared to a 360dpi test print-out produced on my trusty Canon BJC-600, the Epson's 720dpi plain paper result was visibly less dotty and smudged. Specially coated paper for ink-jet printers, though pricier, still produces markedly better results.

A new feature called MicroWeave has been implemented by Epson to stop banding, which was not visible when using coated paper settings but still slightly visible using plain paper settings. Overall, colleagues who examined output from the Stylus Color 500 were amazed at the 720dpi quality.

Running costs

Running costs are competitive, with Epson quoting rates of around 2.1p per page for colour printing with 5 per cent coverage and 2.3p per page for ordinary monochrome text output.

That works out to just under 700 pages per black ink cartridge and just over 1,000 pages for the colour cartridge. Heavier density colour printing will dramatically lessen the capacity of the colour cartridge, however.

The sheet-feeder has a good capacity and there is an optimised facility for outputting smaller format media like index cards.

We did not experience any paper jamming during the test period and the printer was simple to set up. If you are using a PC card on a Risc PC, Epson's Windows drivers are above average, even giving information about how much ink is left in the cartridge reservoirs.

Mechanically, the Epson Stylus 500 is not as refined as its whisper-quiet Canon counterparts and its boxy styling is not very distinctive.

However, with its fine print quality, low running costs and 100-sheet paper feeder, Epson should have a true winner on its hands.

At a typical selling price of £215 + VAT, Canon and Hewlett-Packard must be scratching their collective heads.

At the time of writing, there were no definitive Acorn or Computer Concepts TurboDriver drivers for the Epson Stylus Color 500, however I can't even contemplate a printer of this calibre being ignored by the Acorn community for long and CC have confirmed they are already working on a modified Epson driver.

The IBM Pro-printer and earlier Epson drivers can be used to drive the Color 500. AU

Contact details

Product: Epson Stylus Color 500
Epson UK
Tel: (01442) 61144
Price: Typical selling price £215 + VAT

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Vanessa Feltz
On how to keep up with the kids and make sure that computers give you value for money



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Enhancing performance

Mike Buckingham compares SCSI and IDE

SCSI cards have been around for the Risc PC series for some time now, but more recently the RapIDE has entered the fray. Both offer enhanced performance and better connectivity than an unexpanded Risc PC. If you are one of those with a few pounds in the bank, a Risc PC and a hunger for some bolt-on goodies, sooner or later you'll want to know which to buy and what to consider before making your choice.

This article will, I hope, help make up your mind. But before I continue, I'd just like to comment on the choice of cards covered. This is a comparative review of SCSI vs IDE and I'll be looking at the two cards available to me – the Alsystems Power-tec SCSI-2 and Yellowstone's RapIDE 32. This omits the Cumana cards, an omission that shouldn't be taken as a criticism but simply that I don't have experience of the Cumana SCSI-2. (I do have a Cumana SCSI-1 in my old A310 which works fine)

Small Computer Systems Interface (SCSI)

SCSI has been around for a good few years now, in which time it has evolved from an 8-bit standard to 32-bit data transfer. The three SCSI standards relevant to personal computers are known as SCSI-1, 2 and 3 which define transfer protocols and hardware. What we need to know is that SCSI 1 cards will not be able to exploit the full potential of the Risc PC, while at the other extreme, SCSI 3 cards may not be any faster than a good SCSI 2 because of the limitations imposed by the Risc PC's bus.

One advantage of SCSI is that its longevity means it has been well formalised – which in practice means that any SCSI device will work reliably with a SCSI card.

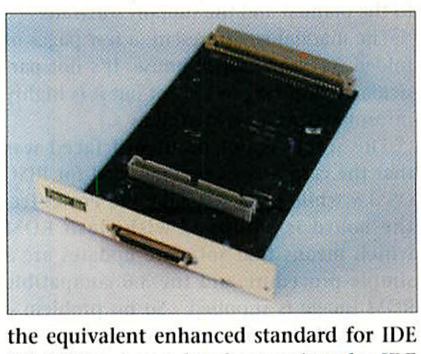
Despite this advantage, Acorn has never fitted a SCSI interface to its machines, probably because SCSI is more complex and thus expensive. But they have been available courtesy of Cumana and others for many years and more recently Alsystems has made its mark too.

PCs had a brief flirtation with SCSI – but that was last year. This year PC World, for example, has all but dropped the standard.

Integrated Drive Electronics (IDE)

Although a relative newcomer, IDE has really taken the PC community by storm – it is now the standard internal interface used by IBM compatibles. Despite its relative youth, the IDE standard has already moved on.

The current standard is known as E-IDE – where the extra E stands for Enhanced but it relates only to hard discs, ATAPI being



the equivalent enhanced standard for IDE CD-ROMs. Acorn has been using the IDE standard since the A5000, taking advantage of the mass of cheap hard drives aimed at the PC market.

In contrast to SCSI, IDE systems are less well formalised and the specifications still leave room for interpretation. This means that some IDE devices will not work with some IDE interfaces – even though they should. (You have to be careful which hard drives you fit to a Risc PC IDE interface for example.) E-IDE is a definite improvement but some dealers are still not convinced that compatibility is guaranteed.

Why do you need another interface?

First, the Risc PC has an IDE interface with two connections – for one master and one slave drive. The hard drive supplied is connected as the master unit. If you have an IDE CD-ROM that will be configured as the slave. So straight away you have run out of slots if you want, say, a second hard drive or CD.

Second, Acorn's IDE interface isn't E-IDE which means that, compared to the most recent equipment, it is very slow. My Risc PC is fitted with a Conner drive – which is not very quick – and the best transfer rate that can be managed via the on-board IDE is less than 2Mb per second which is well short of what the fastest drives are capable of achieving (See the test figures). If disc speed is important, it's worth looking into other possibilities.

Lastly, the Risc PC's IDE interface cannot support external equipment, so if you want to connect anything else to your computer, a scanner for example, you will need something with an external connector.

These figures clearly show that the RapIDE/Quantum combination is faster, but it must be recognised that the Quantum was specifically chosen because of its speed – it is amongst the fastest hard drives around. Alsystems say their card is capable of better results than my drive delivers (they report achieving transfer rates of over 4Mb/s) and that they are currently finish-

Test figures

Conner HD4/RISC IDE/Power-tec test*: KB/s
512K - R:1389, W:1207
64K - R:1198, W:1111
1K - R: 468, W: 441

ConnerHD4/RISC IDE/Yellowstone test: KB/s
Slowest - 1293, Fastest, - 1694

Power-tec SCSI/IBM/power-tec test: KB/s**
512K - R:2844, W:2871
64K - R:2618, W:2154
1K - R: 306, W: 244

Power-tec SCSI/IBM/Yellowstone test: KB/s**
Slowest - 2340, Fastest - 3276

* This test reports the read and write speeds for a range of block sizes, I've shown the largest, middle and smallest.
** *Read ahead/write after* cache configured for approximately equal read/write speed.

RapIDE/Quantum/Power-tec test: KB/s
512K - R:4124, W:4173
64K - R:3711, W:3955
1K - R:1110, W: 698

RapIDE/Quantum/Yellowstone test: KB/s
Slowest - 3276, Fastest - 4468

Enhancing performance

ing a new version of the drive software to make it even faster.

Power-tec – installation and set-up

The Power-tec from Alsystems has been around for a while now and has had the chance to mature. I installed my card about a year ago although I have updated the software since – the major change being the ability to handle larger (>512K) hard drives.

The accompanying literature supplied was well put together and bound with a plastic ring binding, in my view a thoroughly desirable feature for any computer manual. It is undergoing a thorough overhaul at the time of writing to bring it up to date so I presume the new version will be as good or better.

Installation was relatively simple, only problem being that I didn't read the manual fully! The card uses direct memory access (DMA) and must be fitted in one of the lower two expansion slots which support this feature. Put it anywhere else and it works – but only very slowly!

Once running, the Power-tec gives you an array of options to set up your drive: the cache can be tuned to trade read/write speed against each other; the drive can be partitioned with each given a name and its own icon; access rights may be set for each partition; partitions from other systems may be converted to Power-tec format; and the flash ROM may be reprogrammed. You can choose to do it the hard way or choose express install which will set all the basic things up for you.

SCSI facilities

One SCSI card will support up to seven devices which can be connected in any order. The only stipulation is that each one must have its own ID number. These may be inside the computer connected to a single ribbon cable, or they may be daisychained externally – SCSI cards have multiway connections to the outside world.

Syquests, both internal and external, are supported under RISC OS as is the Panasonic Proteus drive. For PC card users, Aleph 1 and Alsystems are working on ASPI drivers to interface a wide range of SCSI devices to the PC card. Both should be available shortly. SCSI drives may also be used in 'direct SCSI' mode for the PC card which provides faster data transfer rates at the expense of denying RISC OS any access to the drive.

ATAPI standard CD-ROMs are also supported by the Power-tec card, provided they are plugged in to the Acorn's IDE socket. The penalty is that very fast CD-ROMs may be held back by the Acorn interface.

Cost

SCSI cards are currently selling for around £205 (inc VAT), but you must add to this the extra cost of SCSI devices (just check the ads). They have come down in price and are falling further but neither as fast nor as far as IDE devices. Set against this is the fact that one SCSI card will support seven devices which may be external. And if your machine is already full, it could save the cost of adding an extra slice.

RapIDE – installation and set-up

Yellowstone's RapIDE interface is the new kid on the block. It wasn't launched that long ago and I think it's fair to say that Yellowstone haven't quite yet got everything as they want it. But let me say immediately that my criticisms are not related to the performance of the card but to the manual and the support software.

The manual is, at present, a few pages of folded A4 produced in-house. It's not particularly inspiring to look at but it is highly informative and easy to follow.

The single major problem I faced was that the card arrives programmed for RISC OS 3.5 while I use 3.6. Like the Power-tec, the board is equipped with flash ROM which means that software updates are a simple procedure and the 3.6 compatible ROM image is supplied. So no problem – but only if you know what to expect.

The manual says that when the RapIDE board is installed correctly (which can be in any slots as the card doesn't yet use DMA), it signals its presence on starting up the machine. Mine didn't. After much fiddling in the belief it wasn't working, I decided to reprogram its flash ROM anyway to see if I could wake it up. Hey presto, everything was present and correct. It was the manual that was wrong. There is also a problem with the disc formatter – Yellowstone are awaiting clearance to use Acorn's large hard disc formatter.

I'm assured that all of these criticisms are being dealt with and perhaps by the time you read this they will all be history.

Setting up is simple, requiring only that you set the correct number of drives. If everything has been plugged in according to the manual, all should now function correctly.

RapIDE facilities

One RapIDE card will support four internal devices – a mix of E-IDE drives and ATAPI CD-ROMs. The E-IDE standard requires drives to be paired master/slave and insists that slot one master cannot be a CD-ROM. Thus RapIDE will support up to four hard drives or one hard drive and three CD-ROMs.

You could (if you can cope with altering all the necessary instructions in your boot files) also transfer your original hard drive to the RapIDE, perhaps considerably increasing its performance (but don't expect anything much out of the Conners!)

Yellowstone are working on software to support removable hard drives under RISC OS though I can't yet discover if this will operate correctly with PC cards.

Cost

RapIDE is the cheaper option at about £140 (inc VAT). You will also benefit from the lower prices of Hard Drives and CD-ROMs which sell in much greater numbers into the IDE oriented PC market. However, if you are likely to want large numbers of add-ons, remember that one card only supports a maximum of four devices and nothing can be connected externally.

Conclusion

Both cards are easy to install, to set up and to keep up-to-date as they both feature flash ROM reprogramming. If you choose your hard drives with an eye to speed, there isn't much difference between the two. The Power-tec is perhaps a bit slower at present but their new software should bring it up to speed soon.

If you want the cheapest way to connect some extra hard drive capacity or CD-ROMs, then almost certainly the RapIDE is for you with the advantage that it is also very fast. But problems will arise if you ever want to connect something a little more exotic – or anything externally. In that case there is no option but to choose a SCSI card. Ultimately the SCSI is more expandable, allowing for a greater number of devices to be driven by one interface, and can control a wider range of equipment. Which you choose is up to you – and will largely depend upon individual requirements. AU

Product details

Product: RapIDE32
Supplier: Yellowstone Educational Solutions
Address: Bramingham Park Business Centre, Enterprise Way, Luton, Beds, LU3 4BU
Tel: (01582) 584828
Fax: (01582) 562255
Price: £139.83

Product: Power-tec SCSI 2 card
Supplier: Alsystems
Address: 47 Winchester Road, Four Marks, Alton, Hampshire, GU34 5HG
Tel: (01420) 561111
Fax: (01420) 561100
E-mail: sales@alsys.demon.co.uk
Price: £175 + VAT

The Acorn User Awards 1996

Steve Turnbull reports on the results of this year's awards

These awards were decided by a vote from the regular columnists of *Acorn User*. Some of the results are certainly unusual but they reflect the views of those who are, perhaps, closest to the Acorn market.

Each columnist was given the opportunity to provide a first, second and third place package, their first choice being awarded three points, the second two and the third just one. The points for each vote were added up and the package with the highest score won.

In addition there were the four *Reader Awards* which reflect what you think are the best packages of the year, Acorn dealers and the best parts of *Acorn User*. The number of votes this year exceeded last year by a factor of 20, partly due to the ability to vote via the Internet.

The awards were presented at the Exhibitors Reception after the first day of the Acorn World Show 1996.

Columnist Awards

Best graphics package

Winner: *ChangeFSI*, ART
Runners up: *Photodesk 2*, Spacetech, *ProArtisan 24*, *Clares*,
Well I can't deny that this came as quite a surprise — perhaps more so to the producers of the main 24-bit graphics packages for RISC OS — but after the additional work put in and the making of JPEG a native format from RISC OS 3.6, such a versatile (free) product should go down well.

Spacetech put in an immense amount of work to produce the new version of *Photodesk*, turning it into a real killer app when compared to *PhotoShop* on the Mac and PC.

Clares have revamped *ProArtisan* to use the innovative PCA protocols which bode very well for the future of Acorn graphics packages.

Best DTP software

Winner: *Ovation Pro*, Beebug,
Runners up: *Impression*, Computer Concepts, *TextEase*, SoftEase,
This one perhaps was no surprise at all. Released earlier this year *Ovation Pro* is doing for DTP what *Photodesk* has done for image manipulation — creating a package that provides the professional facilities seen on other platforms for RISC OS and, in the case of *Ovation Pro*, producing a user interface that makes it easy for *QuarkXPress* professionals to move across to RISC OS.

Impression has dropped back to second place from last year, while *TextEase* comes in again as one of the most innovative and easy to use DTP products ever seen.

Best business software

Winner: *Prophet 2*, Apricote Studios,
Runners up: *FireWorkz*, Colton Software,
***DataPower*, Iota Software,**
There's just no competition for Apricote Studios' *Prophet 2* accounting software — unless it's the all-new *Prophet 3*, just released. Perhaps some company would like to give Apricote Studios a bit of a challenge over the coming year.

Fireworkz from Colton provides a pleasantly integrated package of all the standard business software applications while *DataPower* by Iota, down from second to third place from last year, is certainly a good database.

Best music software

Winner: *Sibelius 7 v3*, Sibelius Software,
Runners up: *ProSound*, Oregan,
***ReMIDI*, Michael-Dennis Biemans**
Perhaps it was predictable that *Sibelius* would make it to that top slot again. With many superb improvements over the year, this is one application that people happily throw away their PCs and Macs to use.

Still there are threats to its supremacy, not in the realms of music manuscript reproduction, but in general terms. *ProSound* (soon to be reviewed in *Acorn User*) fills a real need in the production of music as does that excellent PD application *ReMIDI* that replaces a hardware MIDI player with a software application.

Best network software

Winner: *Access Plus 2*, ART,
Runners up: *CDNet 2.5*, Cumana,
***SerialNET*, iSV,**
Once again ART reaps the prize with its excellent peer-to-peer software. This updated version provides more security and more solid connectivity.

Cumana's *CDNet* — which was first last year — allows efficient access to CD-ROMS across local networks while *SerialNET* from iSV provides a cheap option for small networks.

Best educational software

Winner: *Multimedia Showcase*, Cambridgeshire Software House,
Runners up: *NStore*, HS Software,
After the superb Burns CD CSH were certainly pressed to come up with a sequel. They succeeded with the *Multimedia Showcase* which provides the power of multimedia in an easy-to-use guise.

NStore makes a good runner-up but made first place in the PocketBook software category.

Best comms software

Winner: *ANT Internet Suite II*, ANT,
Runners up: *Acornet*, Phillip Temple, Stewart Brodie, Tom Hughes et al
No surprises here either, the *ANT Internet Suite II* came romping in with the first place votes of nearly all our specialist editors and it certainly takes some beating in

the professional field.

ANT has gone to a lot of trouble to ensure that this version provides easy connectivity to major Internet Service Providers all around the world.

For those who may not know, *Acornet* is a very successful effort to pull together the diverse PD Internet software into an easily configurable suite. All the major packages are combined into one suite with a single configuration application.

Best PD software

Winner: *ArcWeb*, Stewart Brodie
Runners up: *Zap*, Dominic Symes
***StrongED*, Guttorm Vik**

This is certainly getting to be a habit with Stewart Brodie as once again his excellent *ArcWeb*, worldwide web browser waltzes in with the best PD software award. This excellent package — included as part of the *Acornet* suite or available separately — would give any commercial web browser a run for its money.

Zap makes it into second place as one of the two PD editors that gets argued about as to whether one is better than the other — *StrongED* is that other.

Best hardware

Winner: *StrongARM Upgrade*, ART
Runners up: *Risc PC 700*, ART
***Quad speed parallel port CD-ROM drive*, Cumana,**

ART did it again in this category – the amazing StrongARM upgrade for Risc PCs. So much has been said about this product that there's really nothing more that can be added here.

Coming in second is ART's upgraded *Risc PC* with the slightly faster ARM710 chip and 16-bit sound. Third is Cumana with its CD-ROM drive that plugs into the parallel port — very useful for those with A30x0 and A4000 series machines.

Best programming tool

Winner: *Zap*, Dominic Symes
Runners up: *Acorn DDE*, ART
***StrongED*, Guttorm Vik**

Winning the battle over StrongED once again is *Zap*, which was a runner up last year, so well done Dominic. Acorn was in first place last year but has slipped this year.

Best expansion card

Winner: *Risc TV*, Irlam Instruments,
Runners up: *DMI50*, Audio Dynamics,
***RapIDE*, Yellowstone,**

There was a bit more variety in the area of the best expansion card — Irlam Instruments deservedly won first place with its highly innovative *Risc TV*, the system that allows you to display high quality, full colour TV in a window using any monitor in any mode regardless of the selected number of colours.

The Audio Dynamics sound system, the *DMI50*, was also appreciated along with the Yellowstone *RapIDE*.

Best PocketBook software

Winner: *NStore*, HS Software,
Runners up: *FindIT*, Steve Litchfield, PD
***Mapper 3a*, Steve Litchfield, PD**

After many years of producing high quality products HS Software finally got its reward with *NStore*, a system that tracks how pupils are doing on the National Curriculum targets and provides automated report writing.

The PD software *FindIT* and *Mapper 3a* can be used with Global Positioning Systems to find out just where you are and track your movements.

Reader Awards

Best product

Winner: *StrongARM Upgrade*, ART
Runners up: *ANT Internet Suite II*, ANT,
***Ovation Pro*, Beebug,**

No surprise at all, our readers were almost unanimous in their approval of the hardware that makes their machine run at lightning speed — so ART scooped yet another prize.

The ANT Internet Suite II and Beebug's *Ovation Pro* were other obvious choices that have brightened the Acorn world this year.

Best article/series

Winner: *Acorn Interviews*, Karen Peach and Steve Turnbull, Oct 1996 issue
Runners up: *Run the Risc*, Mike Cook, continuing series
***Writing HTML* series, David Matthewman, continuing series**

It has to be said that we were slightly embarrassed at this result. Not only did the results include editors and ex-editors of the magazine, the current editorial staff were the winners. However the Acorn Interviews which revealed a great deal about Acorn's future plans had us just as excited as the readers.

Mike Cook's series on building hardware has been fascinating readers of Acorn magazines almost since the market began. Indeed, Mike holds the record of having at least one article about Acorn machines being published every month since March 1983 — over 150 articles.

With the incredible expansion of the Internet, and the worldwide web in particular, it's hardly surprising that David Matthewman's series on creating HTML pages has gone down so well.

Best advert

Winner: *'Completing the Jigsaw'*, Atomwide
Runners up: *Ovation Pro*, Beebug
***Composition*, Clares**

For the second year running *Atomwide*'s impressive Puzzle advert has claimed first prize. Many complex techniques and a very ram-ful Risc PC were required to put all the elements of this work of art together.

The *Ovation Pro* advert showed just how good a simple offering can be when you have to communicate a lot of text but still maintain a level of artistry and interest.

For the *Composition* advert Clares chose a very effective "hand drawn" approach that illustrated the abilities of the software in a relaxed way.

Best dealer

Joint winners: *Norwich Computer Supplies* and *Atomwide*
Runner up: *CJE Micros*

Nothing to choose between them — NCS and Atomwide came in together to show that they can deliver good service to their customers. The runner-up CJE Micros has certainly put in good work over the years.

Of course being a dealer isn't a bed of roses for anyone — customers can be tricky to handle on occasion. Unlike the box-shifters in the PC market, Acorn dealers are usually enthusiasts just like you.

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2.0Gb	3.5"	IDE	£169.00	£198.58
2.1Gb	3.5"	IDE/Qua F/B	£179.00	£210.33
2.5Gb	3.5"	IDE	£209.00	£245.58
3.2Gb	3.5"	IDE/Qua F/B	£245.00	£287.88
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A3000 1-2 MB Non-Upgradeable	£22.00	£25.85
A3000 1-2 MB Upgradeable	£55.00	£64.63
A3000 2-4 upgrade for above	£64.00	£75.20
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THE RISC DISC - VOLUME 3
The StrongARM Special

Due to the desire to make Risc Disc 3 a StrongARM special we delayed launching it at Acorn World 96 to allow all our contributors as much time as possible to update their programs for use with StrongARM.

We hope that you will find it worth the wait.

Following the features of The Risc Disc One and Two, Volume 3 has sections on Commercial Demos, PD/Shareware, Resources files (including Artworks, MIDI, Replay, Sprites, Drawfiles, JPEG, GIF, Electronic Books) and much more all presented in the unique easy to use format.

The PD / Shareware section has all the latest versions and includes over 30 Games, 35 Graphics programs and 28 Internet utilities, in fact over 400 programs in total. Essential Utilities include ZAP and StrongED as well as a large number of graphics files and utilities suitable for creating your own Web pages.

Subject to availability we also hope to have the full 1.2 Release of RiscBSD along with the latest StrongARM info and updates from Acorn.





Background texture generated by Texture Garden



Demo of Kiyeko and the Lost Night CD



StrongARM info

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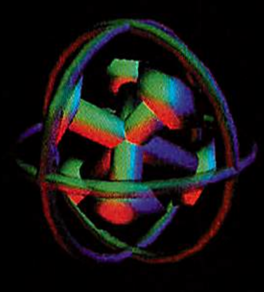
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CREDIT CARD ORDERS WELCOME

A 'C' breeze part 2

Matthew Bloch

continues his arcade game tutorial by explaining the object handling system



How observant are you when playing a video game? What exactly is going on to create the effects you're seeing? All arcade games use some kind of object handling system. The computer keeps lists (or tables) of these objects – their size, position, speed and so on. On each game frame it goes through the list working out what to do with each object and where to plot it.

So for the player's spaceship, the object handler needs to read the keyboard and move the object left or right accordingly. If the fire button is pressed a 'bullet' object needs to be created. All the bullet objects are then collision-checked with alien objects. If there is a collision we delete both objects, replacing them with an 'explosion' object... as you can see this process of checks and interactions becomes complex after a while.

Look at the data structures in Figure I. These are central to the Popcorn game 'engine'; all our functions will manipulate some of these in one way or another. The C header file describing all these is called h.Popcorn; it's worth noting how the diagram fits with the C definitions. To use Popcorn you should #include "Popcorn:h.Popcorn" in your C files, and link your executable with Popcorn:o.Popcorn.

Each set of related objects is stored in an **object table** which contains a number of **game objects**. In our game, we're going to have one table for the aliens, one for the player (a table of one object), one for the player's missiles and bullets, and another for special effects – which just need to be plotted without interacting with the rest of the objects.

The object table structure does not have a fixed size; if you look at the header file you'll see there's only space for one object defined. We can rely on the fact that C does not check for out-of-bounds arrays like BASIC: this means references can be made to object[10], just as long the memory is there. The table's header is a fixed size but after this any number of objects can be included; keep in mind that these are actual object structures not pointers to them.

Our first function is **Popcorn_NewTable**. This reserves space for an object table using the standard malloc() call because the tables aren't likely to move around in the memory. It also makes development work simpler, even if it isn't the most efficient memory manager.

The number of objects to be stored should be specified and whether the table is to be collision-checked or not. If you tell the function that the table does not need collision checking, the collision table pointer will be set to NULL. The 'next object free' is an array reference to the next object free but this *only* applies when there is an empty table.

To explain, when a space is needed in a table to create an object with **Popcorn_CreateObject**, it initially returns a pointer to object[next_free], and increments next_free.

When next_free reaches the maximum number of objects for that table, **Popcorn_CreateObject** will then search for 'holes' in the table where objects have since been deleted. This is obviously at a small cost in speed so **Popcorn_Tidy** will compact a table and reset the next_free value to reflect the number of objects that are in it.

This system can be compared to books on a bookshelf: **Popcorn_CreateTable** creates an empty shelf with space for a certain number of books, **Popcorn_CreateObject** finds space for a book on a specified shelf, filling from left to right, **Popcorn_DeleteObject** will remove a book from the shelf and **Popcorn_Tidy**

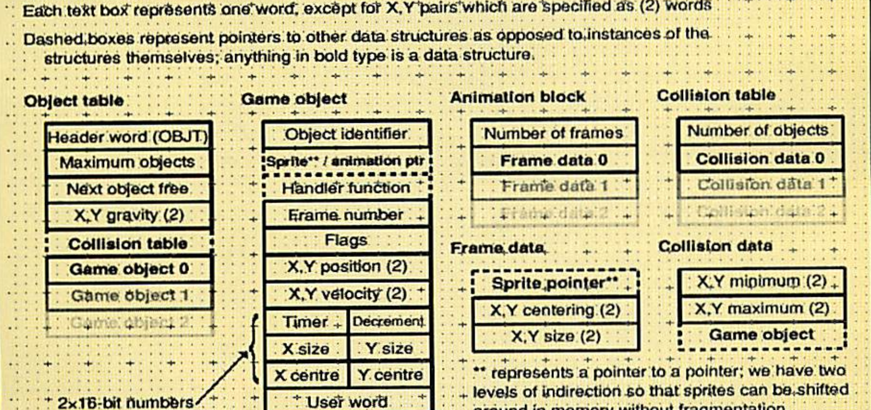


Figure I: Popcorn data structure



A 'C' breeze

part 2



will push all the books along from right to left so all the space is at the right-hand side.

Handle with care

Popcorn_Process is the central function which goes through an object table, plots the objects, moves them on and animates them. Its behaviour on individual objects is controlled by the object flags and other information. To start with, the *object identifier* is a single word which identifies the object as being a certain type; it says nothing about how the object should be handled or plotted. The next word contains the necessary information to plot the sprite; it can be either:

• A pointer to a sprite *anchor* (a pointer to a pointer). An anchor is a **fixed** address in memory which will always contain the sprite's address. This means the address that the anchor holds can change without affecting any parts of the program using the sprite data

• An **animation block**, containing a list of *sprite anchors*, one for each frame of the animation The latter case is specified by setting a particular bit (flags.bits.animate in the C header) in the flags word, and you can set flags.bits.yoyo to get 'back and forth' animation, as opposed to looping.

Moving on, the *object handler* is a function which is called under certain conditions during a process pass, and is critical to the smooth running of the game. These conditions are controlled by the object flags:

• The handler can be called every frame (attn_every)

• It can be set to be called every time the object needs plotting (attn_plot), so the Popcorn sprite plotter doesn't have to be used. This will not be called every frame; remember we don't want to plot every object if 'skipping' a frame to make up for lost time. This can be used in conjunction with the std_plot flag to add on extra detail to a sprite

• It can be called when the object strays outside any of the three windows (either plot_window, game_window, or user_window; the only difference between these windows is that plot_window will affect sprite clipping). These are the flags attn_plotout, attn_gameout and attn_userout respectively; the windows are global variables

• It can be called when the timer runs down to zero. On each frame, the 'decrement' is subtracted from the timer value, and if it hits or goes past zero, the handler can be called if the attn_timer flag is set.

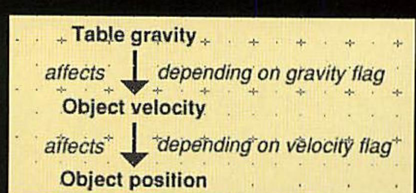


Figure II: Relationship between position, velocity and gravity

Notice from the C header filer that objects can also be set to be deleted under these conditions, the relevant kill_ bit in the flags are set. If both the attn_ and kill_ flags of a particular condition are set, the handler will be called *before* the object is deleted, so the deletion can be averted by moving the object back inside the window or resetting the timer.

Each object has a velocity, and each table has its own gravity settings. An object's position can be affected by its velocity, and its velocity affected by the table's gravity, depending on the settings of the velocity and gravity flags. For those who gave up on calculus, take a look at Figure II.



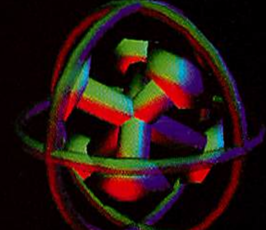
Collision course

Another vital part of a video game is to check for collisions between objects. Say on screen there are three of the player's bullets, 20 aliens and the player. We need to check all the bullets against all the aliens and all the aliens against the player. This works out to 80 checks per frame which is a fairly conservative estimate. Add one more bullet and it's up to 100 checks. Due to the time this could take, the Popcorn collision checking routines do not check the object tables against each other directly. Instead, when each table is processed, **Popcorn_Process** builds up a tight **collision table** tied to the **object table** it is processing. This structure contains a list of rectangles and the objects associated with them so that it can be quickly scanned and handlers called if there are any collisions. We could go on later to hand-code the collision routine, which is why the structure is so simple.

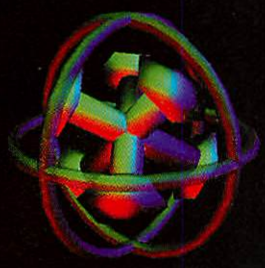
So to check two tables for collisions, use **Popcorn_CollisionCheck** and pass pointers to the two tables as parameters. If there are any collisions, the object handlers in the *first* table will be called, and (ref) will point to the object in the *second* table.

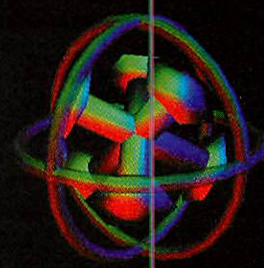
Waterfalls

The *!Gush* demo on the cover disc serves as an example of everything I've covered so far. It also highlights some of the deficiencies in the library. The standard disclaimer applies here: this code is very much *in development* (I'm still working on it as you read this) so there will be inconsistencies. Run the program then look through the source









code (c.gush) carefully; it doesn't actually do very much 'hard work' itself apart from setting the display and handling animation compensation.

There are two tables in this demo, blue_table and yellow_table. Each has space for 200 objects: 199 balls, and one 'generator' object. This generator isn't plotted and doesn't move, but its handler is called on every frame. The handler's task is to create a 'ball' object which is plotted, and uses velocities and gravity.

The ball handler has two functions: one is to make the ball bounce if it strays outside the plot window, the other is when two balls collide, in which case the handler deletes both balls. As balls are deleted from the table, more can be created by the generator objects. The main loop merely processes the two tables, swaps the screen banks and checks for collisions – the Popcorn library and our object handlers do the rest for us.

Resources and prototypes

Although the *!Gush* demo works, the code used to produce it is painfully inefficient. Look at how every object has to be created; after finding space for an object we have to either set every field in the object, or zero it to avoid problems with the processing function. This results in some fairly monstrous code, a lot of which is duplicated. There's also the problem of needing to explicitly reserve memory for each sprite and organising this process. With a game involving hundreds of sprites, there's no way memory can be allocated for each sprite by hand – an automated system is needed.

So, let's say we keep a list of resources. Each resource is specified in a text file as being in a particular resource group. When the game is started, the list of resources is loaded, but none of the actual resource files. Resources could be sprite files, sound effects or any other data relevant to the game. Then, when objects start to be created which rely on these resources, we can ask for particular resource groups to be loaded into memory. This is how Popcorn works with resources:

* **Popcorn_LoadResourceFile** takes the filename of the resource file as its parameter and loads the master resource list into an internally-held buffer
* **Popcorn_LoadGroup** loads all the resource with a specified ID number into memory, returning an error if there isn't enough space. Groups are referred to as 32-bit integers but are specified in the resource file (see disc for format) as four-letter abbreviations. This is convenient: in C, 'A' can be written to mean the integer 65, so logically we can write 'LLAB' (spelt backwards for some bizarre reason) to the integer 0x4C4C4142. The upshot of this is that although **Popcorn_LoadGroup** take an *int* parameter, we can write something which is readable by humans to mean a 32-bit number to the computer
* **Popcorn_LoseGroup** does the opposite, freeing memory used by resources with a particular ID
* **Popcorn_FindResource** will return a pointer to a resource anchor, as described above. Resources are searched for by their filename.

So now we can write statements such as: object->plot_id.addr = Popcorn_FindResource("$.ball"); without the programmer having to worry too much about when and where resources are loaded. This still won't be enough; now the resource is organised, a way of storing object templates is needed – a common definition for each 'ball' object in the case of the *!Gush* demo. Popcorn has a system of object 'prototypes'. Like the resources, these are loaded from a text file and stored internally. The file format is a little more complex and is documented aon the disc. Each prototype has a unique 32-bit ID and the same trick can be used with the compiler to make the IDs human readable. There are two calls to deal with prototypes:

* **Popcorn_LoadPrototypes** takes a prototype filename as its parameter and loads the list of prototypes into memory. This must be called after **Popcorn_LoadResourceFile** since it attempts to link each animation frame specified in each prototype with the relevant resource. The prototype manager needs to be able to look up the address of each handler from its name at run-time. The only way it can do this is if the programmer supplies the filename of a *symbol table*, and copies the filename into the global variable **symbol_table_filename** before calling this function. The symbol table is a list of symbols (functions, variables and so on) inside an AIF file (the sort which link produces). To create a symbol table, the parameter '-symbol <filename>' is added to the end of the link command. This can be done by going to the 'Tool options' item on the menu of the !Make project window

Popcorn_NewPrototype takes four parameters: the table to create the new object in, the prototype to create it from, and the x,y co-ordinates of the new object. The object's flags, handler and plotting details are filled in from the specified prototype; all the other fields are zeroed

Now look at (and compile with 'MakeFile2' if you want) c.gush2, whose output produces the same effect as c.gush, but it uses the prototype and resource managers. This cuts the complexity of the source significantly. The prototype and resource files (and the symbol table) can be found inside !Gush.Data; and they will give a good idea of how to write these files yourself.

• *This month's cover disc features the full Popcorn library so far. Some features may be unexplained, but I'll wrap it all up and present the game next month.* AU



The magic of Number

MENTAL ARITHMETIC appears to be in decline as do many activities we used to perform before computers came along with the easier alternative of pressing buttons. I remember how many of my mathematics lessons began. We would all stand and the teacher would reel off long sums very quickly. "Three plus five times eight divided by four minus one times two...."

As soon as we'd lost the running total we would sit down. This recital of what seemed like the longest sum ever went on until just one pupil remained standing. It was a sort of mental warm-up.

Number Genie is a fun way to exercise the grey matter by providing a flexible environment for exploring patterns and properties of positive whole numbers up to 100. It's suitable for use in one way or another by students of varying abilities from 6 to 16 years.

It covers many National Curriculum attainment targets for all key stages making it very versatile.

Also included is a mental arithmetic competition for two to four players which could also form the basis of a mental warm-up session. Great fun.

Number Genie costs £24.95 inc VAT from Computer Tutorial Services, tel: (01983) 294333.

History, Geography and R.E. all rolled into one!

EXPLAN'S *HOLYBIBLE* software has been extended with the arrival of the Secondary Education Pack, including the text of the Revised English Bible.

In addition to the high-quality rich-text format of the REB, the pack comprises four Resources – Timeline, Places, Quizzes and Temple.

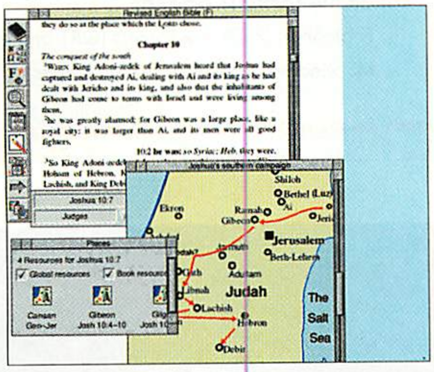
Timeline automatically follows the text, enabling users to place Biblical characters within their historical context. The maps in Places operate dynamically, zooming in to an appropriate magnification on the correct map for locations and journeys mentioned in the text. Photographs taken on location in Israel show some of the more important places.

In Temple, 3D vector images of the furniture and fittings from both the Tabernacle and Solomon's Temple can be placed inside cut-away drawings of the buildings. Further text material gives the background of early Jewish faith and worship. All the resources are exportable and may be edited and amended. An extra utility called Expect allows the 3D drawings to be rotated into an appropriate orientation before positioning them.

The educational resource material is unique to *HolyBible* and has been researched and developed especially to take advantage of the facilities found on the Acorn platform. The REB Pack comes with a teachers' guide and ideas booklet, suitable for use in mainstream schools and church youth activities.

The REB Pack costs £45 for a single-user licence, and £90 for an educational site licence. It is an add-on module and requires a *HolyBible* Base Pack to be installed first.

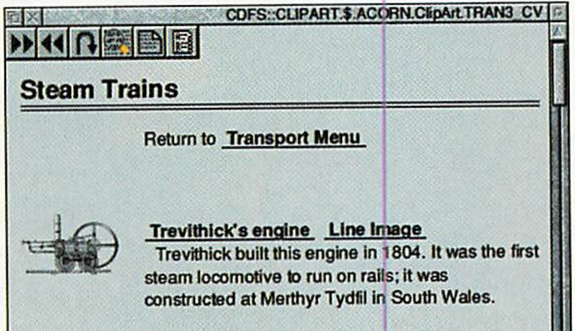
ExpLAN may be contacted on (01822) 613868, fax: (01822) 610868 or e-mail: explan@explan.demon.co.uk



Quality graphics and cross referencing makes this software invaluable for RE

Sherston's Clip Art

PRODUCED in association with DEC_dATA, *The Sherston Clip Art Collection* is a CD-ROM containing over 2,300 images. But to call this clip art really doesn't do it justice. The high quality images are accessed via DEC_DATA's superb hyperlink software *Clearview* which enables users to easily track down the picture required. Each image is available as a fully rendered *Draw*file or in outline only and is displayed in *Clearview* with a small piece of text about each image. The images can be easily loaded into *Draw* by clicking on one of the emboldened words alongside each image.



Pictures are shown with text. Hyperlinks make finding the material much easier

Developing Quality

PUBLISHED BY the British Computer Society, *Developing Quality* is a guide for teachers and student teachers who are interested in developing the quality of their use of IT within their own subject areas. The book poses several pertinent questions and offers clear guidance. Several projects are included for all subjects at Key Stages 2 and 3. The book was compiled by a group of teachers and advisors including Colin Rouse who frequently contributes to *Acorn User*. What better testimonial could one wish for? At £6.50 this is well worth buying and using.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

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Pocket marks

Geoff Preston looks at the Pocket Book version of NStore

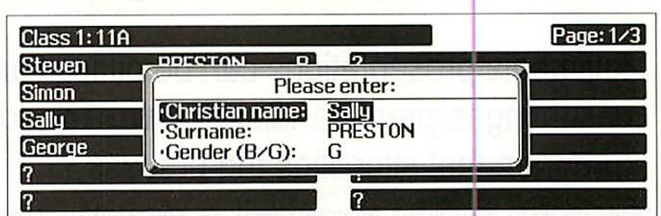
It's taken a long time, but finally someone has come up with a report writing and record keeping program for the Pocket Book II. The desktop version of *NStore* is well known to many teachers and was favourably reviewed in the Christmas 1995 issue of *Acorn User*. This has recently been upgraded and version 4D is available for £44.95 or £16.95 as an upgrade. In designing the Pocket Book version, HSS has worked hard to reflect the same look and feel as the desktop version, within the limitations of the Pocket Book.

Nstore runs on the Pocket Book II or Psion Series 3a which must have at least 256kb, although 512kb is better and will allow for some additional editing. The software is available on either SSD (solid state disc) or floppy disc and is loaded and installed in the usual way. For the first time for as long as I can remember I had to resort to the manual to get started as it wasn't immediately apparent. Once you get going it's fairly straight forward although I did find myself needing to look back at the manual from time to time to find out about key presses.

Set up

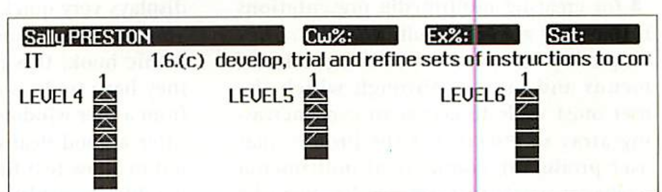
The first job is to decide exactly what you want to do because once you've committed the actual set up to the computer it cannot be changed without starting again. Choosing Custom Set Up from the menu invites the user to select the subject or subjects required for reporting. As I wanted to produce Information Technology reports only, I selected IT and de-selected everything else. Curiously, the next screen informed me I was reporting on two areas. The second area, I was subsequently informed, was for teacher comments.

The next stage is entering the student data. Thankfully *NStore* will accept names from a CSV file which can be pulled out of the school's administration system, or as I did, taken from the network user profiles. Initially I tried entering data from the Pocket Book keyboard which is rather slow.



Student profiles

Once the student data has been entered, National Curriculum Attainment targets can be 'ticked off' by entering a 0, 1, 2 or 3 against each target thus building up a profile of the work for each child and for each subject.

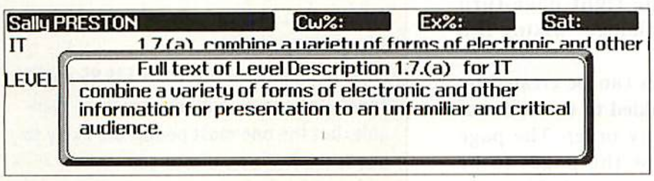


The reporting option translates all the ticked boxes into English sentences which includes each student's name at appropriate places. Sentences also contain 'her' and 'him' in the correct places. The report files can be exported in a variety of formats for printing on a desktop computer.

Assuming there is sufficient memory in the Pocket Book, *NStore* allows you to work on up to 12 classes with a maximum of 36 children in each and with all subjects. The software holds all National Curriculum data as well as general comments. Additional features include the ability to edit the comment statement banks as well as the National Curriculum attainment targets which in view of the number of changes made to the National Curriculum, seems to be a minimum requirement.

Conclusion

I'm not going to get involved in a debate about the pros and cons of assessment and report writing packages other than to say that some teachers are uncomfortable with computer-based comment and statement banks. Frankly, this program isn't going to change the minds of those who are firmly against them.



The advantage of using a portable computer for compiling data for assessment and reporting is that it *is* portable and therefore can be taken from class to class. That said, if it is going to be used 'in public', regular backups should be made and the computer should be password protected to avoid the risk of falling foul of the Data Protection Act.

A shareware program called *AcoPass* is included on the cover disc to enable Pocket Book II users to password protect their computer. Psion versions have password protection built in.

To use this program in any serious way, you will require access to a serial link to make entering data easier and to make printing possible. This could be a very useful program for Pocket Book users although I feel that the portable version will be more appropriate for single subject teachers while the desktop version would seem to suit form tutors better.

The data generated between the two versions is not yet 100 per cent compatible although I understand that is next on the list, as is the facility of using the Pocket Book data to add to the data in the desktop version. AU

Product details

Product: NStore
Price: £49.95 + VAT for Pocket Book II version on SSD
Supplier: H.S.Software
Address: Freepost, Swansea SA2 9ZZ
Tel: (01792) 204519

Simple multimedia

Multimedia presentations can be difficult and time consuming to produce. **Geoff Preston** looks at a program that simplifies the process

The problem with many programs used for creating multimedia presentations is that they are often quite complex. They frequently feature a bewildering maze of menus and buttons through which the user must wade to access an ever-increasing array of effects. For the professional user producing commercial multimedia packages, such features are likely to be useful and possibly even vital.

For some of the more complicated presentations on CD-ROM, using many of these fancy features is almost mandatory. For the home user or the school teacher wanting to put a simple package together quickly, these unnecessary frills make the software too complicated and time consuming to use. Consequently the programs don't get used. For young children they are just too involved.

Basic multimedia

Cambridgeshire Software House has noted this pitfall and produced the most basic multimedia creation program. Although the term used is basic, don't be fooled into thinking this software is only capable of producing third-rate amateur presentations. *Multimedia Showcase* is a very capable program but any potential user should be aware of its built-in limitations.

If you want to produce commercial CD-ROMs with lots of clever display tricks, this is not for you. If, on the other hand, you need to create simple but attractive displays very quickly, look no further. For young children wanting to create an electronic book, this program is ideal as all they have to do is drag pictures or sounds from a filer window onto a *Showcase* page. After a good deal of thought, CSH chose not to allow text files to be entered, as this would let children attempt to put more text onto a page than it is capable of holding. Consequently, text must be entered from the keyboard.



You can use Draw, Paint, JPEG, Sound, Maestro and Replay files (running from a CD ROM or hard disc) to make up your pages.

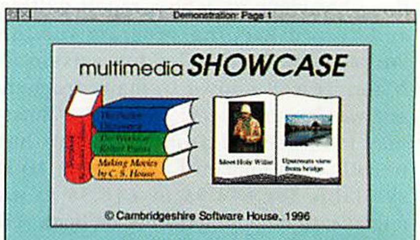
Multimedia Showcase is supplied on a double density disc containing the editor called *StoryMaker*, the read only application called *StoryRead* and a demo presentation. The software must be installed on a hard disc and requires 2Mb to run. Although the program is supplied with a manual, I didn't actually open it. How many other programs of this type can you say that about?

StoryMaker

StoryMaker loads onto the icon bar and clicking on it displays a standard save dialogue. The presentation must be named and dragged onto a suitable filer window. From then on there are a limited number of options.

Text can be typed onto the page, pictures in most common formats can be dragged in, several types of sound can be used including *Maestro* and *Oak Recorder*, *Replay* animations and animated sprites are supported and that's about it. Not a great deal you may think, but more than enough to create clear and meaningful presentations. Once the first page is complete, clicking on the right page-turn arrow will display a dialogue asking if a new page is required.

For class work, pages can be created by different pupils and added to the communal presentation in any order. The page editor will then allow the pages to be sorted into the order required. The only other options available with the page editor is font style and page colour.



A simple way to make up Electronic Books and multimedia presentations.

Story reader

The finished or partly finished presentations are played using *StoryRead*. Apart from clicking on the page-turn arrows to read through the presentation, *StoryRead* has one very clever feature. Choosing Carousel from the application menu automatically scrolls through all the pages playing all the movies and sounds as it goes.

Conclusion

I bet we could all sit down and without thinking list a dozen or so things that this program cannot do. But that would be missing the point. It has been carefully pared down so it contains only the features really needed. If we're honest, these are the features that are used most frequently in other multimedia creation programs. The program has been made extremely easy to use for the very young and quick to use for the not so young.

Product details

Product: Multimedia Showcase
Supplier: Cambridgeshire Software House
Address: PO Box 163, Huntingdon, Cambs PE17 3UR
Tel: (01487) 741223
Fax: (01487) 741213
Price: A single user disc costs £39.95 + VAT. There are several multiple user discs available, but the one most people are likely to buy is the five-user disc at £80 +VAT

When Mark Moxon visited Scotch College in Western Australia, he found an information technology utopia: one Pocket Book per pupil

Pupils & port

Nestling in the quiet suburb of Swanbourne, to the west of Perth city centre, is Scotch College. The school buildings are old by Australian standards, but inside is an information technologist's dream: Scotch has embraced the Acorn ideal of hand-held computers to the fullest extent.

Scotch College is an independent school catering for 1000 boys from years 1 to 12 (age 5/6 to 17+) – in Australia school leavers are 17. The age groups are split up into the Junior School (years 1 to 7) and the Senior school (years 8 to 17), and both schools have a serious commitment to technology, particularly Acorn equipment.

Barney Clarkson, the Director of Educational Computing, and Paul Dench, Barney's second in command, are the two prime movers behind the school's implementation of technology. They've both been involved with Acorns for some years, but it wasn't an automatic decision to invest in Acorn Pocket Books: careful investigation was needed to persuade the school to buy the right machines.

Pocket Books galore

'We started to look into hand-held computers as a result of our general brief to equip pupils with the best educational technology,' remembers Paul. 'We went to a conference in Melbourne, and our parents were making noises about other schools who had laptop computers for pupils. We looked at the use of laptops in these schools, but we didn't like the techno-centric implementations we saw: we wanted technology to be used as an educational tool, not just for the sake of using technology.'

This was when Barney and Paul first heard of the Acorn Pocket Book. It appeared to fit the bill, literally: the recession was restricting capital expenditure, so there was no way a large number of laptops would be financially practical. There were other advantages – the Pocket Book's excellent battery life, its small size, its ability to hook up to desktop computers – so the decision was made to conduct a trial of them in the classroom, at the same time as a trial with Amstrad laptops.

'The trial came out in favour of the Pocket Books,' says Barney. 'We gave every member of one class a Pocket Book, and set up a mini-lab of Archimedes machines at the back of the classroom, with access to a shared printer, and a couple of A-Links. Compared to another class who were equipped with Amstrads, the Pocket Book won hands down.

'The Amstrads were too bulky, didn't have such good battery life, weren't nearly as reliable and proved an effort for the teachers to incorporate into their classes. The Pocket Book was much easier to use regularly as part of class, as pupils could keep them on their desks, and easily get straight into using the word processor or spreadsheet.'

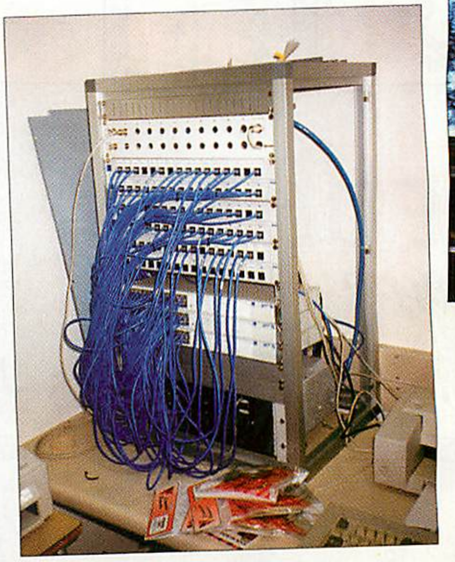
Incorporating portables

The school then made the decision to incorporate Pocket Books as a major part of the information technology structure in the school. The school proposed that parents should buy Pocket Books for their children, and the school would provide the technological infrastructure to support the machines. The model for the infrastructure was based around having networked machines in every classroom, giving access to A-Links, resources and shared printers.

'We judged that one desktop computer per classroom wouldn't be enough,' says Paul. 'All our classrooms have at least two machines – a lot have three – as well as a shared printer and an A-Link per machine. This is a vital part of making palmtop technology work in a school: without the infrastructure, pupils and teachers simply can't use the Pocket Books to their fullest potential.

'When we decided on Pocket Books over laptops, we estimated that the Pocket Book would provide 80 to 90 per cent of the functionality of laptops as far as using them in schools. In retrospect we underestimated: Pocket Books can do about 95 per cent of what laptops actually do in class, but having the networked mini-labs in each classroom is a vital part of enabling them to be this useful.'

The school's existing





ables

Econet network, which covered all Junior school classes and parts of the Senior school, needed to be extended and upgraded, especially into the classrooms: only three of the 12 classes had networked machines in them. The investment was large, but worth it.

'We introduced the Pocket Book into the whole of year 5,' says Barney. 'All of the parents accepted they had to buy a $499 Pocket Book for their children, and many were very enthusiastic. Since then we've steadily introduced them every school year, so now years 5, 6, 7 and 8 have Pocket Books, and next year they will flow to year 9. At present there are about 350 pupils with Pocket Books, and about 40 staff.'

Pocket Books in the classroom

The system had a few teething problems – when both teachers and pupils are new to a machine, there will obviously be problems – but they soon settled down.

'We found that there were a lot of questions in the first year of Pocket Book use,' says Paul, 'but in the second year there were far fewer.

'We found out that the children were teaching themselves: if someone got stuck, one of their friends would help them out. The pupils were even teaching the teachers how to use the Pocket Books.'

This was borne out in Scotch's Junior school. The class I visited was full of year 7 children, all too eager to show me what they did with their Pocket Books, and how they could word process, create spreadsheets, record bits of The Simpsons off the TV: I got the feeling that they were showing me their favourite toy rather than an educational computer. There was also a friendly rivalry between the boys, as each tried to show that they knew more about the little computer than their friends.

The teachers have also embraced the technology fully, even those whose previous exposure to computers was minimal.

It takes a very iron-willed teacher to run an old-fashioned "row-of desks" lesson when the whole class has computers

The main area where Pocket Books are now an essential part of the curriculum is in literacy: one teacher I talked to said the Pocket Book had increased both the amount and quality of writing his students were producing.

Pupils who would not produce anything in writing class were happily writing essays, and the more apt students were producing work with fewer mistakes and better English. 'I have to think hard to imagine what it was like before the Pocket Book,' was the response. 'It's transformed the classroom completely, and definitely for the best.'

Support for the machines

A successful implementation of Pocket Books and mini-labs has to include support from the computing staff – just setting it all up and letting it happen is a recipe for disaster. Barney and Paul work hard to keep the momentum going, both in terms of actively encouraging use of computers in the curriculum, and doing a public relations job to justify their choice.

'We go into classes on a very regular basis, and help the teachers to use the Pocket Books and incorporate their use into lessons,' says Barney. 'We have a flexible teaching load so we can always be there for teachers who need either technical support, or help in setting up projects or resources on the computers. The interaction with pupils and teachers is part of the Scotch College philosophy of not having IT as something separate to the curriculum: computing is a tool, not a subject, and that's a philosophy we've always had in the school.

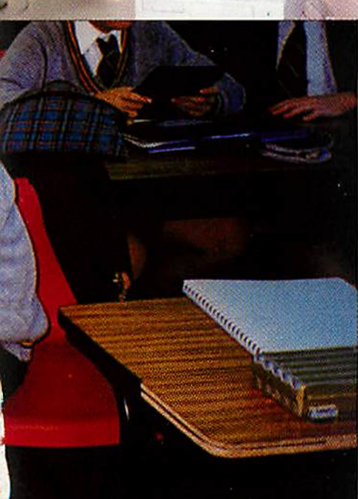
'Our palmtop computers are leading to changes in the classroom that are in accord with learning theory. It takes a very iron-willed teacher to run an old-fashioned "row-of-desks" lesson when the whole class has computers and the students want to collaborate: we needed to set up a critical mass of technology, and we're reaching that. We're finding it's the curriculum that is powering our use of computers, rather than us having to coax teachers to use technology. For years we've known what we should be doing in teaching, and the Pocket Books are making that happen.

'For example, one pupil went into maths class and said he'd heard that if you folded a tissue 50 times, it would reach the moon. The teacher instantly saw that this was a job for the Pocket Book's spreadsheet, and another IT activity was born.'

The school of the future is here, and it's using Pocket Books. It makes you wonder how we ever coped at school before. AU



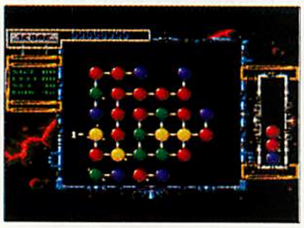


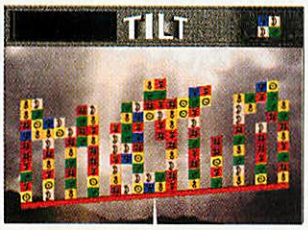


Top left: The Ethernet hub
Top right: Scotch College
Above: One of the main computing labs
Left: Year 7 students using Pocket Books

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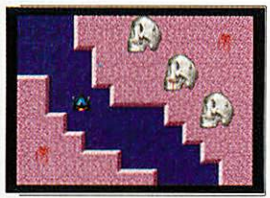
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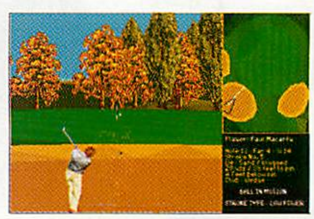
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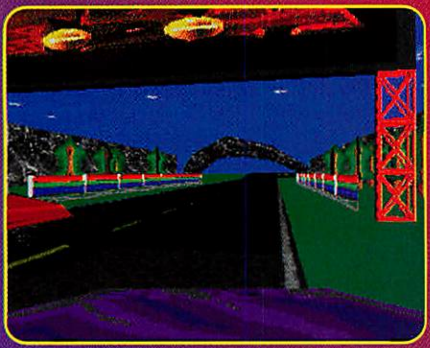
GAME SHOW

Steve Mumford looks at the latest games releases

By the time you read this Acorn World will have been and gone and a lot of users out there will have fitted their StrongARM processors. Spreadsheets and modelling programs will operate much quicker but there's only so much fun you can have with a database – sooner or later people will start thinking about games.

I've heard several rumours of StrongARM-aware games, the most talked-about of which is probably Robert Templeman's *Destiny*. Robert was hoping to have a demonstration of this *Quake*-style game ready for the show; I'll let you know as soon as I see it.

Meanwhile, TBA has been working on its TAG game engine, and *TAG2* should be making an appearance very soon. Martin Piper was kind enough to reveal a few screenshots of one of the latest games in development. Designed for high-end machines, *Rally* (a working title) looks set to provide the Acorn with a high-quality three dimensional racing game.



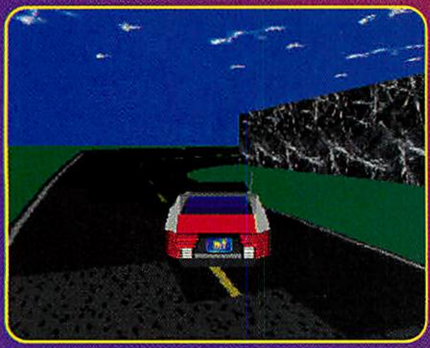
Last Offence

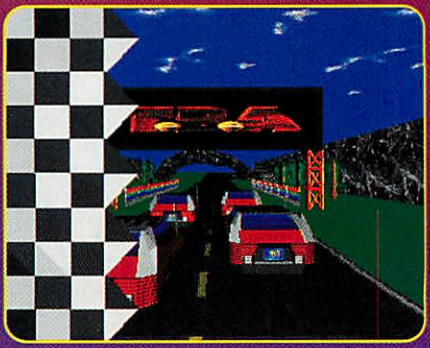
Those aren't the only new games approaching the Acorn this Christmas; Modus Software has sent me a demonstration of its latest game named *Last Offence*. It's a scrolling platform shoot-em-up that reminds me a little both of *Flashback* on the Acorn, and *Stryker's Run II* back on the BBC Micro – a game I thoroughly enjoyed.

The storyline goes something like this – a group of intergalactic criminals have been making a nuisance of themselves for some time, the theft of the modules of a new all-powerful supercomputer was the last straw. You've been chosen to pay the members of the crime ring a visit, rap their knuckles in a terminal way and make sure they don't do it again.

The game covers four worlds. Each of the criminals has buried himself in the depths of their home territory, surrounded by their minions. To see them personally, you'll have to fight your way through hordes of mercenaries, robots and small blue flying things. There is a two-dimensional side-on view of the levels, and because Modus has used oversized sprites, the view is restricted to the current level with a glimpse of those below and above.

TBA's new Rally game provides high quality 3D graphics







The main character is well animated and can run, jump, crawl, slide and hang from the ceiling while swinging athletically to and fro. Mind you, the control mechanism could do with a little tightening here and there – dropping to a crouch takes several frames of animation whereas turning round and walking in the opposite direction happens almost immediately, making positioning over ladders difficult.

Progress is made harder by the inclusion of moving platforms, electroshields and computer locks that can only be opened by finding the right computer disc. There are teleporters dotted around as well, so it's all too easy to get lost.

The game fuses traditional bitmap graphics with some rather nice *ArtWorks* graphics in between levels; it's quite a clever touch and they're certainly impressive. *Last Offence* is still in an unfinished state but I'm looking forward to playing the full game. Modus is promising an enhanced mode for owners of Risc PCs, displaying 16 colours at a resolution of 416 by 576 pixels – the rendering of the *ArtWorks* files will also take advantage of

GAME SHOW



the host machine, going up to 16 million colour reproduction if possible. The sound accompaniments should be impressive as well, with eight channels of sound being used during the game – four for music and the remainder for sound effects.

There'll be 16 levels overall, and each world will have a gargantuan guardian to defeat. Those are just some of the features that Modus is promising – watch this column for further news.

Allum's burning

I've had to wait slightly longer than I anticipated for the final version, but here it is at last. Paradise has released the first in its brand new budget range. For under a tenner you can buy *Inferno*, a fast-action game set deep in the heart of a radioactive moon.

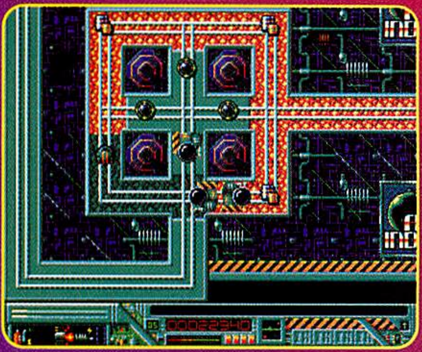
Allum's nuclear power plant has suffered a freak accident and its core is about to go critical – in a matter of hours the entire planet will detonate if a rescue plan isn't forged. And that's where you come in – strapped into a mobile fire extinguisher with all mod cons, you must hurtle round the levels of the power station, cooling the core as you go. Perhaps predictably, the security systems are running amok and if you stay in the same place for very long you'll end up receiving an unhealthy dose of laser radiation.

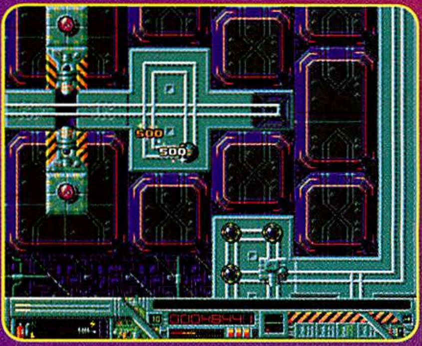
The action is viewed from above, and to control the craft use the four standard direction keys – plus a fire button, of course. The vehicle can only travel on the metal rails laid down the levels, and although you can pick up a fair turn of speed whistling down a straight piece of track, a hefty chunk of momentum is lost by screeching round a corner – so plan your route carefully and minimise the number of turns to finish the level in the fastest time.

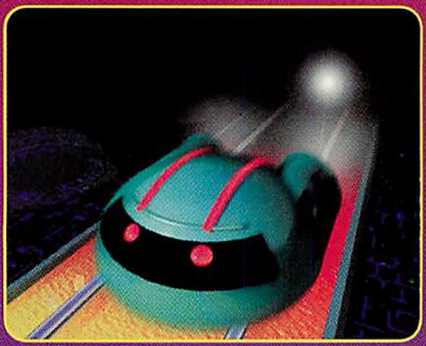
The burning core can be seen as glowing red plasma beneath the tracks; as the firefighter passes over a section that's still aflame, the fire dies away and the tile becomes black and lifeless. Once you've extinguished all the core on one level, an exit opens and you're free to travel to the next.

Objects are strewn round the corridors, ranging from machine parts that boost your score to the all-important ammunition supplies and special weapons bonuses that help you on your way. Many's the time I hurtled into the path of an oncoming droid only to realise that my trigger-happy antics had left me bulletless and somewhat vulnerable.

It can take a while to figure out what's going on – the action can get quite intense and the crowded control panels aren't that easy to read at a glance. However, given perseverance the widgets and dials at the bottom of the screen begin to make sense. The early levels are simple to let you into the game gently although it doesn't take long for the size of the playing area to expand, and the maps of the later levels are horrifyingly large – the increase in firepower of the security droids hindering your efforts is also a tad worrying. In the early stages of the game, weaponless service robots bumble around and get in your way but by the last levels, you're pursued by laser-toting security droids and shot at by rotating gun turrets.



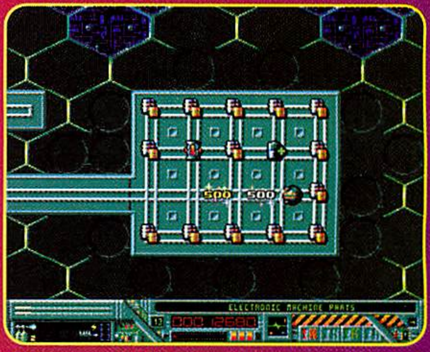




Inferno from Paradise – budget action with lots of excitement

Strategy plays an important part in *Inferno* – the gun emplacements are pretty fearsome, and to attempt to scoot past them without disabling them first is foolhardy. However, as your bullets can pass over walls, with good planning it's possible to destroy most of the turrets before they even get a chance to shoot. The downside is that the longer you spend doing that, the less time you'll have to complete the level – dally for too long and your craft is destroyed by the influx of radiation.

The packaging is neat and well-designed –



all in all for £9.99 *Inferno* is a game that's definitely good value. With a controlled learning curve and the extra features that pop up in the later levels, it'll keep most players occupied for a fair while. Paradise has thought long and hard about *Inferno*'s design and I think it's got it right. If this is a good example of its future budget releases we've got a lot to look forward to.

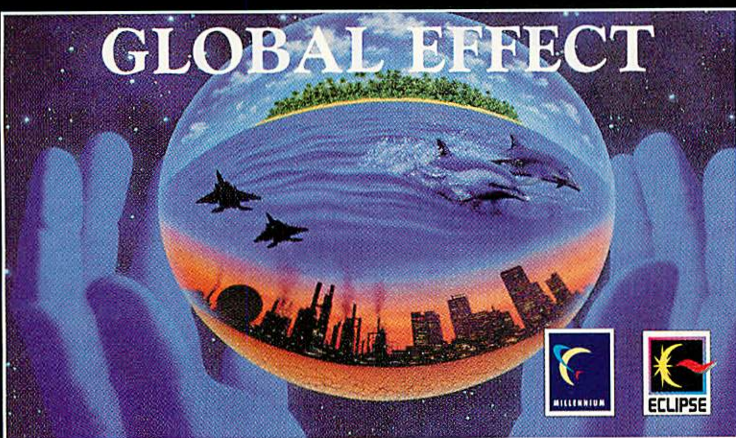
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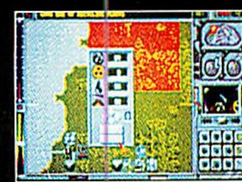
That's all for now, but I've just got time to tell you that Mike Goatly, author of *Rock Hard Fluffy Thing*, has decided he hasn't got time to deal with the administration of selling the game so he's decided to release it into the public domain. More news about this next issue when I'll look at the finished product and let you know where you can find it.

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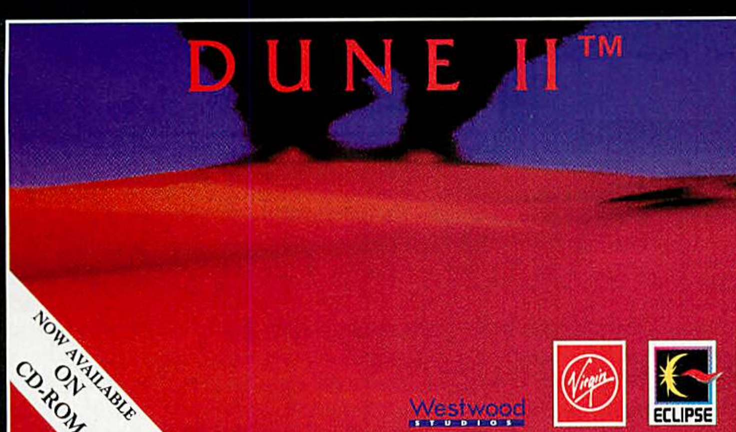




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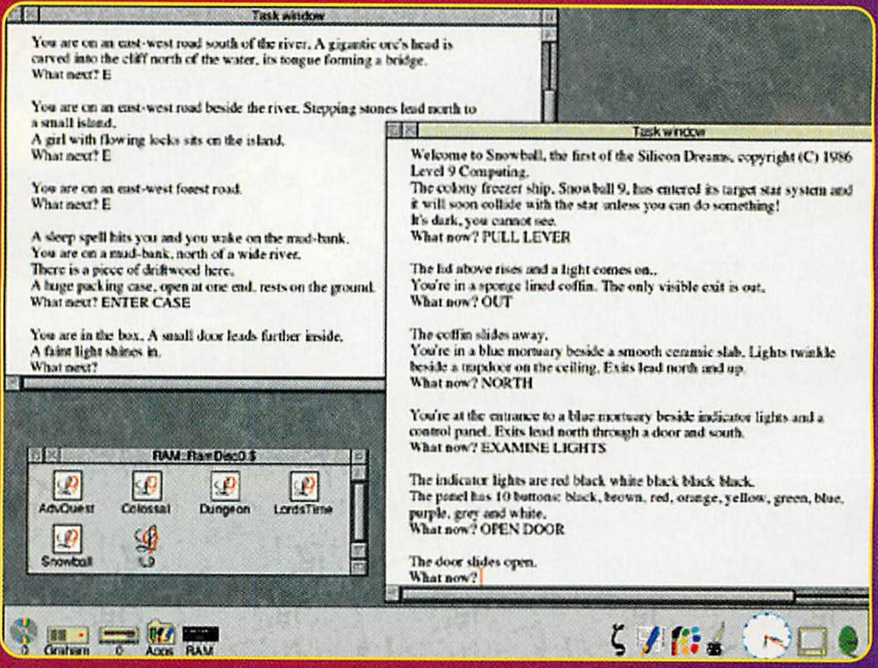
....or, à la recherche du temps perdu.
Graham Nelson reports

British computer games used to be a thriving cottage industry. In the early 1980s, though all right-thinking people owned Atoms and BBC Micros, quite a lot of Sinclair Spectrums were sold along with Orics, Commodores and innumerable Amstrads. (Those are only the memorable ones – whatever became of the Enterprise 64, Memotech MTX-512, Jupiter Ace, NASCOM, the Spectravideo 328?)

The Spectrum has gone the same way as skateboards and Rubik cubes. But nostalgia is having a comeback – satellite channels like UK Gold do very nicely out of re-running *Dr Who* and Abba are selling serious numbers of discs again. The World Wide Web is now crawling with people with professional incomes rather than pocket-money who want their Sinclair Spectrums back. 'Games were better in those days' – maybe. I'd love to have *Snapper* and *Rocket Raid* running on my RiscPC but I suspect it's more about buying a second go at childhood.

The technology now exists to emulate a Spectrum in real time on any modern machine, though emulating the Z80 processor alone makes a tricky exercise in C. (The first person I know who succeeded on an Acorn was David Moore in 1990 – though he resorted to Blu-Tak and coloured paper to get the rainbow sash over the bottom right corner of his A440.)

There's a busy interchange now of memory-images of old Spectrum games. The legality of this is highly dubious but I can't see that anybody is hurt by it. Without quoting any URLs (that is, exact places to look on the Internet), suffice to say that five minutes with (say) the Yahoo index "Computing: Personal Computers" would be enough.



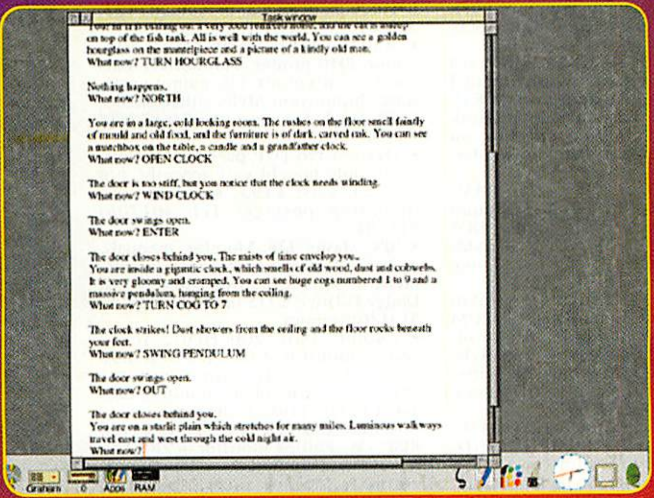
Dungeon and *Snowball* just beginning

Level 9 games...

Some of the most requested memory-images are Level 9's games. Level 9 was more or less a family business run by Mike and Pete Austin, producing text adventures which were miracles of compression. Though the firm continued until 1989 or so, its important games were mostly written around 1983. Using a machine-independent format called "A-Code", Level 9 released its games on tape for most computers of its day – BBC Micro included. It prospered for a while and was markedly more professional than its rivals, which were springing up like mushrooms. (See Hans Persson's bewilderingly long list in the file "/if-archive/info/adventure-game-history" at the anonymous FTP site "ftp.gmd.de".)

Level 9 later enhanced their older works but each was first written for a 32K memory – only a quarter of that available to their American contemporaries Infocom, who wrote for machines with the luxury of a disc drive. Level 9 games are certainly a little cruder in play and have less impressive parsers; but they make better use of compression, so the difference isn't a factor of four.

One big difference is whereas Infocom wrote in the style of the second mainframe game *Zork*, producing highly detailed games with relatively few locations (typically 60), Level 9 imitated the first mainframe game, *Colossal Cave*. A typical Level 9 game has 200 locations, inevitably rather plain to look at in places but their best work is labyrinthine and expansive, and it's still exhilarating to get lost in.



A longer dialogue with *Lords of Time*

...are now playable under RISC OS

Glen Summers (gsummers@physics.ox.ac.uk) has recently written a program to play (most) A-Code games; David Kinder has contributed documentation and Colin Turnbull (Colin.Turnbull@comlab.oxford.ac.uk) has come up with a RISC OS port. As I write, the latest version of the interpreter itself is 2.0.

The RISC OS port presently plays only in a task-window (or out of the desktop as a single-tasking program) but a fully windowed version is in preparation. See the ubiquitous FTP site 'ftp.gmd.de', under 'if-archive/level9/interpreters/level9' where there is a SparkPlug archive for RISC OS – please look there before contacting the authors directly.

A-Code is still not fully understood, and is known to have existed in at least five versions. As in the early days of hacking into the Infocom format, progress is made mostly by disassembling Level 9's own machine-code programs.

Another proviso is that a Spectrum memory-image of a Level 9 game may be compressed – a program called *SPConv* is much used by fake-Spectrum-hackers to convert between such formats.

Also, some images contain copy-protection requiring the player to say what colour a particular box is on the tape cassette inlay – this was the dreaded 'Lenslok' system, as a magnifying glass was needed to pick out the ridiculously small boxes.

A few disreputable Web sites contain games which have been tampered with, removing this protection – I merely mention.

The 'Jewels of Darkness'

Level 9 began with three traditional dungeon games: *Colossal Cave*, *Adventure Quest* and *Dungeon Adventure.* (Like all of Level 9's 'trilogies', this one contains three entirely separate games and was only called a trilogy after the event.)

Colossal is a steal of the original mainframe game, whose FORTRAN source code was widely available from the late 1970s onward. That said, it's the best version I've played, with an expanded above-ground landscape and a more substantial end game.

Adventure Quest (also called *Agaliarept*, after its presiding demon lord) is more varied in setting with desert and underwater sequences, and has a rudimentary plot – the land is devastated by drought and the adventurer must 'take the Talisman twice through the four elements'.

There are some nice puzzles: a fluorescent jellyfish for an underwater lamp and an intriguing set of black and white dots for rapid transport.

Dungeon is not to be confused with the mainframe *Dungeon* (itself a version of *Zork*) – this was a quite new underworld. Like *Colossal* it's basically a treasure-collection, but an enjoyable one. Viciously unforgiving (you can be killed off in about a dozen different ways, with barely any warning, within easy reach of the opening location), *Dungeon* winds up with a long chain of puzzles which need to be solved in exactly the right order.

So it's not easy, it regularly opens up new regions of game, there is a system of coloured collars and a packing case which mysteriously contains a vault – perseverance is rewarded. (Bizarrely, it helps to know the resistor colour code.)

The 'Silicon Dreams'

Science fiction rarely comes off in adventure games, perhaps because a computer simulating a forest is interesting enough to engage the attention, but a computer simulating a computer isn't. So *Snowball*, set on a comet-like colony ship in interstellar space is well worth a look. You play Kim Kimberley (note the gender-inspecific name!), a colonist awakened from cold sleep to attend to a malfunction.

Medical androids (the black Nightingales) are determined to prevent you leaving the logical (but really rather annoying) maze of suspended-animation chambers; past that is an intriguing spaceship with a toroidal map, because of artificial gravity.

Androids of various kinds roam all over *Snowball*, making the game come alive. Oh, and when the game doesn't understand what has been typed, the original version used to reply "Arfle barfle gloop?" Level 9's finest moment.

Two sequels, *Return to Eden* and *Worm in Paradise*, are less compelling. In the first, Kimberley's repairs have been misconstrued by the awakening colonists as sabotage so that Kim has been obliged to crashland on the new world of Eden. *Worm in Paradise* is set far in Eden's future: it has become a mechanistic and somehow disappointing place. Unfortunately the same can be said of the game which feels too much like 'interactive fiction by numbers'.

The 'Time and Magik trilogy' and others

This really is a bogus trilogy – *Lords of Time* was one of Level 9's first releases, consisting of nine linked plots set in the English countryside at intervals through time. Rare among early-80s games in having a female author (Sue Gazzard), its atmosphere is a successful mix of the familiar and the outlandish.

Red Moon and *The Price of Magik* came years later and are basic dungeon games with an added magic system, influenced, I suspect, by Infocom's *Enchanter* trilogy. There is some element of combat – as in a role-playing game – and spells are ingeniously coupled to specific items, such as a dulcimer, giving them unexpected abilities.

There's also a heap of torn-up olive leaves, or 'olivetti', in which an acorn lies forgotten – red-hot satire back then.

Other Level 9 games include the treasure hunt *Emerald Isle*, *Erik the Viking* (from Terry Jones' book) and a few games from the later 1980s: the *Ingrid the Gnome* trilogy, *Lancelot* and *ScapeGhost* (1989), in which the ghost of a policeman must solve the crimes he has fallen victim to.

I don't know what happened to Level 9 or how it was wound up; its glory years were 1983 and 1984, after which rivals like Melbourne House and Magnetic Scrolls overtook it. Anyway here's a chance to catch *Snowball* again or just to wallow in nostalgia.

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• Retired disabled Clan member has 54 cover discs and mags for sale. AU, AW, AC. Offers or swap for software for A3010, wanted Vector and Euclid very cheap please and games. Tel: (01204) 571836 Bolton.

• Cumana 300 CD-ROM with SLCD interface. Boxed, new, for Achimedes 300, 400, 500, A5000, A3000 etc. £100. Tel: (01622) 814970 evenings.

• A4000, 2Mb RAM, TechWriter, Eureka, Turbo Challenge, Canon BJ10SX printer, £350. Tel: (01422) 373064.

• A3010, 4Mb, 60Mb Hard disc, Canon BJ10 printer, Turbodriver software, 14in colour TV, games, software, Impression Style, other extras. £600. Tel: N Somerset (01934) 876228 (eves).

• Ovation Pro DTP package, unregistered, only bought very recently, not needed. Cost £193, sell for £130 including postage. Tel: (01706) 817570.

• BBC Master 128. Monitor, manuals, mouse, computer to TV lead, assortment of software on disc and ROM. Dodgy D-Drive, £115 ono. Tel: (01395) 513126 evenings.

• A4000, 2Mb, 200 HDD, Acorn colour monitor, VGC, £375. A3010 VGC, £125. Acorn colour monitor VGC, £60. CUB colour monitor, £20. Tel: (01234) 711657 (N Bucks).

• Archimedes 410 Twin 3.5in drives, RISC OS, Philips monitor + Z88 Lap top. All manuals and discs, PipeDream, voltmace joystick and various software. £200. Tel: (01959) 573619.

• Clear Out! Completely unregistered & unopened !Action Pack. Also, Lemmings, !Vertual Golf, !Chopper Force, !Interdictor, !Zool, !FontFX, !Chess3D + lots more Offers...Tel: Rob (01895) 259842 or e-mail rob@rodean.demon.co.uk

• A3000, 2Mb RAM, RISC OS 3.1, 5.25 in floppy, colour monitor, books, software, £200. Call Rob on (01344) 51006 (after 6pm).

• A5000, 4Mb RAM, two 40Mb hard discs, RISC OS 3.1, various software including Style, Advance, many games, Intertalk. £350. Tel: 0118-962 9209 or e-mail paul@emmbrook.demon.co.uk

• Wanted: A4 laptop, good price paid, needed urgently. Ring Paul on (01223) 517623.

• Wanted: HardDrive,80Mb or more. SCSI with connections. Compatible with Cumana SCSI 1 card (CA006 interface). Reasonable offers please. Contact john@temppubs.demon.co.uk

• Wanted: 80Mb or bigger HD. SCSI-compatible with Cumana SCSI 1 card (CA006 interface). For an Archimedes A410 with a 40Mb ST506 HD already inside. Reasonable offers please. Please phone 0181-568 1633 or e-Mail: tomislav@temppubs.demon.co.uk

• Offers invited for external teletext unit, colour card gold, Aleph1 486 50MHz pc podule. Tel: (01934) 838118.

• For sale: Command Ship space game. Boxed. Also wanted: Football Management games and Air Supremacy. Ring Ryan on 0115-960 3385 (evenings). Good condition. £15 ono.

• A5000, 4Mb RAM Learning Curve, Multisync monitor, manuals and abundant software. Bridget Fonda condition. £300 for immediate sale. Tel: (0973) 294917 (daytime).

• A3010, 2Mb, monitor available. Variety software + many games including Cannon Fodder, Sensible Soccer. 100 + discs and holder. All boxed with manuals. £120 ono. Tel: (01606) 76244.

• Canon BJ10ex Bubblejet printer in perfect condition, with box, manual, cable, ink cartridge and adaptor. A bargain at only £60. Tel: Louis 0181-769 8805.

• Canon BJ200ex Bubblejet printer - brand new and unused, with box, manual, cable, ink cartridge and paper, plus 100 sheet feeder, and Turbo Driver for Acorn RISC amd PC. A bargain at £140 (was £220). Tel: Louis 0181-769 8805.

• For sale: Acorn User issues 54 to 80, Jan 87 to Mar 89. £5. Tel: (01932) 563758 after 6pm.

• Acorn software for sale: StartWrite wp, £6. PC Emulator with DOS + books, £15. PipeDream 4, £20. Almanac v3, £20. Wanted: Hard drive for A3010. tel: (01474) 356985.

• Acorn A3010 with colour monitor, keyboard and JP150 printer with various software. Fairly new. £450. Tel: 0181-752 0701.

• Risc PC 486 card, £50. Canon BJC + Turbodrivers, £250. Publisher, £50, ArtWorks, £50. SCSI cards, £50 each. Compression, £10. All boxed as new. Tel: (0973) 692932.

• For sale: Turbo Challenge 2, Simon the Sorceror (discs), Sim City, Lemmings, HRH, James Pond and Chopper Force. Wanted: Psion A-Link. Ring Andy on (01823) 338941.

• Free to good home: Master Compact. Also, for sale: RGB monitor, £20, eight-speed ATAPI CD-ROM drive, £30. Boxed as new. Tel: Peter (01753) 554570.

• Wanted: Portable Sound plus parallel port sound card, (for use with Aleph PC podule). Tl: 0115-923 1134.

• Wanted: Omar Sharif's Bridge. Phone Sam on (01792) 203386 (evenings).

• Risc PC 700, 2Mb VRAM, 4Mb DRAM, 420Mb HD, 486 PC card, as new. Turbo Pascal. Ultimate expansion card for A3000. Sensible offers. Tel: (01568) 615285.

• A3010 4Mb RAM, RISC OS 3.1, 60Mb hard disc, 2 joysticks, Taxan 770+ Multiscan monitor and over £200 worth games. £350. Tel: (01454) 887652.

• Watford Scanner, £40. Style, £40. PC Emulator DOS, £25. 80 dual disc drive, £35. Tel: (01354) 695595.

• A3010 with 2Mb RAM and Philips mono monitor, Very good condition. For sale for £200. Tel: 0181-886 8344.

• A3000 2Mb, High Resolution graphics system, 14in Multiscan colour monitor. £250. Tel: Middx 0181-967 3048.

• A3010, 2Mb RAM, RISC OS 3.1. Lots of software and extras. In excellent conditon, ideal for school work. £225 ono. Call Andy after 7pm on (01760) 721043.

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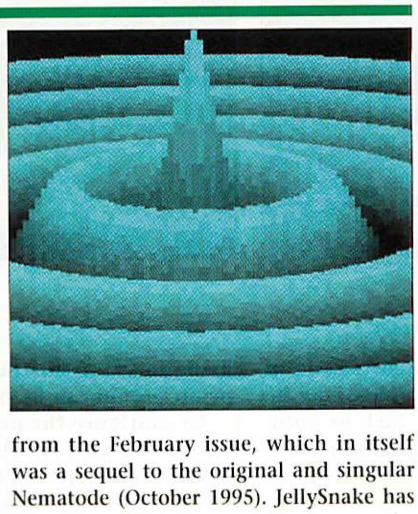
As promised ***info** is brought to you this month in glorious 150%-o-vision! Yes, two extra pages positively bulging with graphical gems and useful utilities. If these pages are missing, please contact your newsagent

star info

Four taste

Author: Nigel Stoner

Here's a double brace of classic *info offering. Let's kick off with Plasland –. You can probably imagine the sort of thing this does, but might not guess that it actually generates a swiftly scrolling sea full of sun-drenched archipelagos. This prog leads neatly into SlickOil which Nigel says was meant to be a Mode 13 plasma generator, but due to a cock-up on the pixel front has ended up in Mode 12 and a lot more oily than originally intended.



JellySnake is a revisit to Nematode3 from the February issue, which in itself was a sequel to the original and singular Nematode (October 1995). JellySnake has been tweaked in such a way as to make the resulting image less revolting. Perhaps this will spark off a whole new line in *info sweet plotters. Cough candy twist anyone?



Finally, a wonderfully neat one-liner that draws those 3-D frozen water drops. The best thing about this version is that it constructs the image in 'waves' that slowly scroll up the screen to form the final picture.

CMOS lock

Author: Scott Bonham

Sometime it would be nice to protect your machine's configuration. Teachers must get especially tired of having to reset half of the class's computers after the 'little horrors' have reconfigured them with type 1 monitors and the like.

On the RiscPC, a password can be set to lock the machine so no one can fiddle with the settings. This utility provides the feature for all machines.

NoCMOS is a module which, when installed, prevents any changes to the CMOS settings.

Obviously, anyone who knows what they are doing can kill off the module but as a means of preventing idle fiddling by those who don't, you'll find *NoCMOS* very useful indeed.

The source code is supplied for anyone who is interested. The method used is very straightforward and the source should provide a good example of how to write a simple module.

The vector for OS_Byte is claimed with SWI "OS_Claim" and if it is called with R0=162, the routine exits immediately. All other OS_Bytes are passed on as normal. Thus, only calls to set the CMOS are stopped.

Kinya till what it is yit?

In response to our own circle challenge set in the November issue of *Acorn User* (you remember – those sea shells), here's another demonstration of the variety of effects from simply plotting circles.

Squint is a command line program that takes a 24-bit per pixel sprite and plots it in such a way that you have to stand at the other end of a darkened room with a couple of friends and squint at the screen to work out what the dickens is going on.

As it stands the program requires an 800 x 600, 32,000 colour screen. We found that although it does work at lower physical and colour resolutions, even poor old ColourTrans can't really handle the colour mapping and dithering needed.

The source sprites should really be quite small – we found that 48x32 is good and 96x64 about the largest. Going bigger can ruin the squinty effect! Half a dozen sprites are provided – these have been ChangeFSI'd from the JPEG demo pictures from the RiscPC. To avoid spoiling the surprise, the files have been numbered rather than named – don't load them into Paint if you want to play along at home. Try **Squint Pic1* as a start.

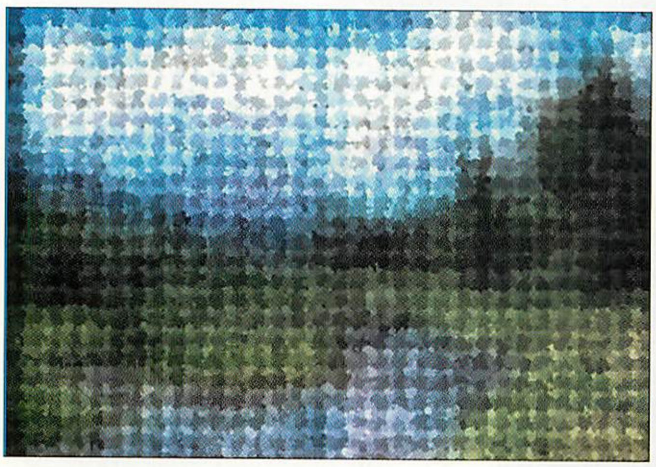
Squint can take a number of parameters. Type **Squint help* to see them all. These affect the way the picture is plotted. To be completely honest, the actual effect of each is a bit unknown as the program just developed rather than being strictly mathematically planned.



- **-slope** Larger values give each light source (pixel) a wider angle of illumination
- **-range** Normally set to the spacing between pixels, this dictates the circle of influence of each pixel. Larger values bring more pixels into consideration when plotting a circle, but consequently slow down the plotting
- **-wobble** Source pixels are placed randomly within their grid squares when set to 100; lower values reduce the effect of this wobble
- **-peak** This is an important parameter to get right. It controls the overall brightness of the picture. It not only depends heavily on the settings of *slope* and *range*, but also on the original brightness of the picture. It would be very tricky to automatically calculate this, so the program relies on you to give it a suitable value
- **-slow** Higher values mean more circles will be plotted.

When playing around, try fiddling with *slope* and *range* and then adjusting *peak* to balance the image. Changing *peak* in steps of 1000 is normally sufficient.

Although the original development work was carried out in Basic it was just not fast enough to be useful, so the final program has been coded in C. *Squint* was the logical progression from a similar program called *Gloom*. Space permitting, this will be in a future issue. If anyone would like to write a desktop front end, please feel free.





Task Master

Author: Barry Wickett

***LookOut* lurks around hunting down unwanted tasks and takes appropriate action when one is found. This may be simply to tell the user of its presence, kill the task or both. You can even set *LookOut* to kill itself once it has done any dirty deed.**

Author Barry Wickett says that *LookOut* is a gross extension of a program that used to wait for the Printer Manager to load and then killed it before killing itself. (Does this sound familiar?) Unless you want to change any of the settings this is rather good as once the Printer Manager has set up the printer modules it is no longer needed. This saves a lot of very valuable memory on a 1Mb A310!

***LookOut* can be used to get rid of anything you don't wish to be loaded onto your desktop. This is perhaps most useful in a classroom environment. It can be set up so it's invisible and also impossible to quit. It will then lurk quietly in the background until a new task is started. A check will then be made to see if this task is on the unwanted list and appropriate action can be taken if a match is found.**

To configure the program, hold down one of the ALT keys while you run it. This will start the program in Set Up mode. From here you can set a number of options:

- **Show icon: an icon will be displayed on the icon bar to remind you of its presence**
- **Allow quit: allow the user to kill Look Out. (Otherwise Ctrl & Break is the only way)**
- **Quit when task done: self explanatory!**

In the bottom part of the window you can set up to 16 tasks to watch for. The Task Number allows you to cycle between the 16 – either type in the name of the task in the Task name icon or select it from the pop-up menu. Ticking Quit Task will force the task to quit. You can also tick Message and enter a text string which will be displayed if the task is found.

Star info

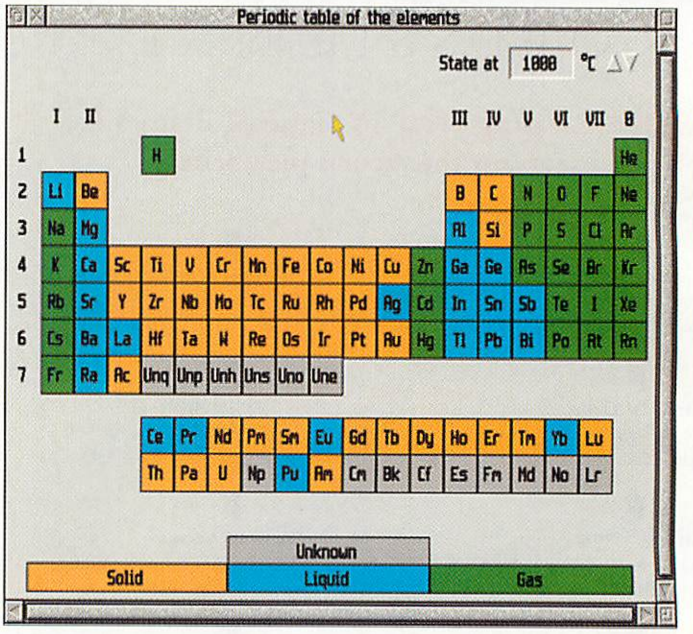
Braving the elements

Author: Jonathan Rawle

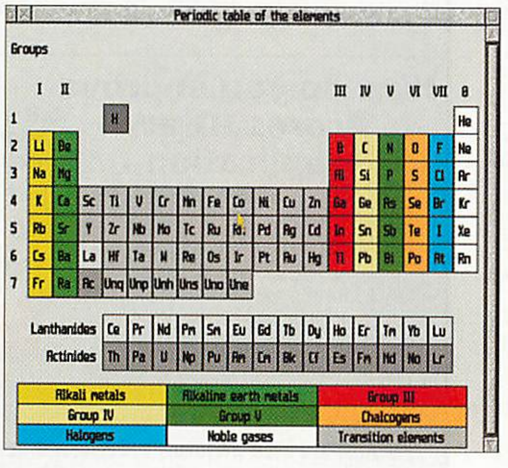
Well, braving isn't in it really, as *Elements* is a decidedly user-friendly guide to the periodic table.

"Clicking on the iconbar icon with the select button opens a window containing the chemical elements in the familiar periodic table arrangement. Clicking on an element with Adjust will display the usual information about that element (atomic number, symbol, name and relative atomic mass). Clicking on an element with Select opens a larger window containing element data:

- Atomic number, name, symbol, relative atomic mass
- Atomic radius in picometres (pm)
- First ionisation energy (the energy needed to remove the outermost electron from each of 1 mole of atoms is their gaseous state) in kilojoules per mole (kJ mol^{-1})
- Electronegativity (in Pauling's units)
- Principle oxidation numbers, and the corresponding ionic radii in picometres (pm) – some elements have only 1 oxidation state
- Density in kilograms per cubic metre (kg m^{-3}) or grams per cubic centimetre (g cm^{-3}).
- Specific heat capacity in Joules per kilogram per kelvin (J kg^{-1} K^{-1}) or Joules per gram per Kelvin (J g^{-1} K^{-1}) (see below). It should be noted that 1 J kg^{-1} K^{-1} = 1 J/kg°C
- The melting and boiling point in any of the five temperature scales (see 'changing the units') and the state at room temperature (25°C). *Subl* denotes that the element sublimes (passes straight from solid to gaseous state)
- The crystal structure of the element in its usual solid state
- How the element's name was derived, the date and country of discovery, and who discovered it

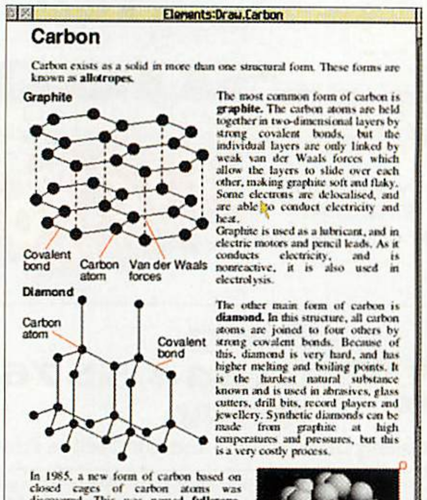


"For some elements, data is unknown or unobtainable. In these cases '-' is displayed in the place of a number. Some elements also have text and/or draw files associated with them, and these can be accessed by clicking on the text and draw file icons respectively.



To edit these files read the file 'Adding' which is inside the !Elements application directory. There are also icons labelled 'last element' and 'next element'. These take you to the previous and next atomic numbers.

"Clicking the menu button over the element data window allows you to type in an element name, symbol or atomic number, and the data for that element will then be displayed. (Only the first few letters of the name need to be entered, and the program will attempt to match it with an element name.) The data window can also be opened at any time by clicking with Adjust on the iconbar icon.



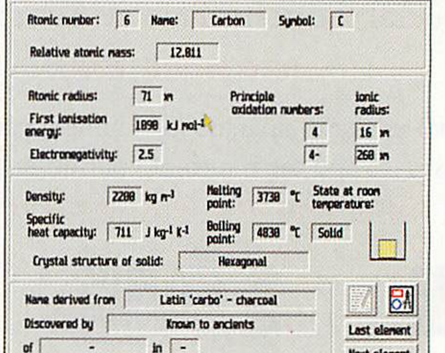
"Clicking Menu over the periodic table displays a menu containing various options. The first group of these allow different types of information to be displayed on the periodic table. For example, selecting 'metals' updates the periodic table to show which elements are metallic. For the 'state' and 'year' options, there is a dialogue box into which you can type a value. Arrows appear on the periodic table and also allow this value to be changed.

"Selecting 'group numbers' and 'period numbers' displays these pieces of information on the periodic table. The option 'save status' saves every option on this menu to disc, so that these options will be selected automatically when the program is started.

"Clicking menu over the iconbar icon displays another menu. From here, windows can be opened that allow you to:

- Calculate the molecular mass of a compound: Enter the molecular formula in its usual form (there are no subscript numbers, so use ordinary numbers, for example Ca3(PO4)2 for calcium phosphate)
- Find the estimated amount of ionic character of a bond
- Display information about the different temperature scales
- Test your knowledge of element symbols and atomic numbers
- Change the units used in the program.

"The Units window, accessed through the iconbar menu, allows you to change the units in which certain quantities are expressed (temperature, density and specific heat capacity). Clicking on OK instructs the program to use the units selected in the window and immediately updates all displays. Clicking on Save also saves these units as the defaults to be used next time the program is started."



From Russia with carry...

Author: Andrew Booker

Rash fools that we are, we jokingly requested a 6502 version of the Russian multiplication program, first written by Mr Thurlby (September 1995) and then updated by Jonathan Wells (February 1996). Andrew Booker, clearly a man to take folk at their word, has supplied the very code. We are true to our word too, and so present it here – probably the last ever 8-bit program in *Acorn User*.

"The 6502 code version is slightly trickier to code than the equivalent ARM code program because the 6502 only has 8 bit registers and so zero page locations must be used to store what could be a 32 bit result." Thank you Andrew for bringing an era to an end.

Closing titles

Author: Matthew Bullock

Closeutil **provides an alternative method of telling the pinboard to iconise a window and a way of reducing a window to just its title bar. Lovingly handcrafted by Matthew Bullock, it can be used on its own but has been designed to be integrated with Nick Craig-Wood's Desktop tool *Director*.**

To use, just double click on the icon to load it. This will set up a menu to appear on the close icon of windows (*Director* must be loaded for this to work). Select *iconise* to tell the pinboard to iconise the window, or select *titleise* to reduce the window to a title bar. To reopen a titleised window, click on the toggle-size icon (right hand side of the title bar). If you already have a close icon menu (like we do) you can just copy the appropriate lines out of Matthew's *Menu* file within the *!CloseUtil* application.

You can also access *CloseUtil's* functionality via its *commands:

```
*Iconise <window handle>
*Titleise <window handle>
```

Matthew has also supplied *PinFix*. This creates a small module to fix a bug in *Pinboard* that stops *Closeutil* working correctly. This may not be necessary on all versions of RISC OS, but is required for version 3.6. When a window is closed, RISC OS broadcasts a message to all active tasks to tell them this has happened. *Pinboard* uses this to remove an iconised version of the window, if there is one. The problem is, when *Pinboard* is loaded, it prevents any other application from receiving the message. *PinFix* installs a filter on the *Pinboard* task that detects the message and re-broadcasts it so other applications can use it.

Chain re-act

Author: Justin Fletcher

Long standing *info contributor Justin Fletcher's latest OS-utility is definitely one for the module writers among us. If, due to bad management, a module dies during it's finalisation code, the OS gives the exceedingly annoying message 'Incarnation not found'. This prog compiles a program called *RmTidy* which attempts to restore normality to the module chain.

IMPORTANT NOTE: Because of the rather unpleasant way the program goes about its business, it is unlikely to work entirely properly on anything except RISC OS 3.1, so run this on your RiscPC *at your own risk!*

The source code is provided in both Basic and Justin's own *JFPatch* format – it is also ready assembled and conveniently named as *RMTidy*. If you find the prog useful, you might like to move this to your library directory and set up an alias: **Set Alias$RMTidy /RMTidy**. This ensures that the prog is run rather than the original RMTidy code in the ROM. This code is in fact no longer supported and never seemed to work properly anyway.

You can test the command by loading the module *Rubbish* which will deliberately cause the problem to happen. Issuing *RMTidy will then sort the modules out.

Justin says he found out that on his RISC OS 3.1-based A5000, the module data is stored in a chain from &07D0. The program works by going through the chain checking if the module has a valid workspace pointer, and if it hasn't it asks if you want to kill the module. If you do, it unlinks the module from the chain.

This is the safest way to do it because it uses the least amount of messing with OS routines which are likely to confuse it. This does, of course, mean that the module remains in memory and its memory is not released. But on the other hand, it also means that if the module contains code linked to vectors or filters which would *really* kill the computer by becoming corrupt, it will not be removed.

*Justin adds that he accepts no responsibility for any problems which this application may cause or loss of data resulting in its use. We'd like to add that this disclaimer also applies to *info and Acorn User.* Paranoid – us? never!

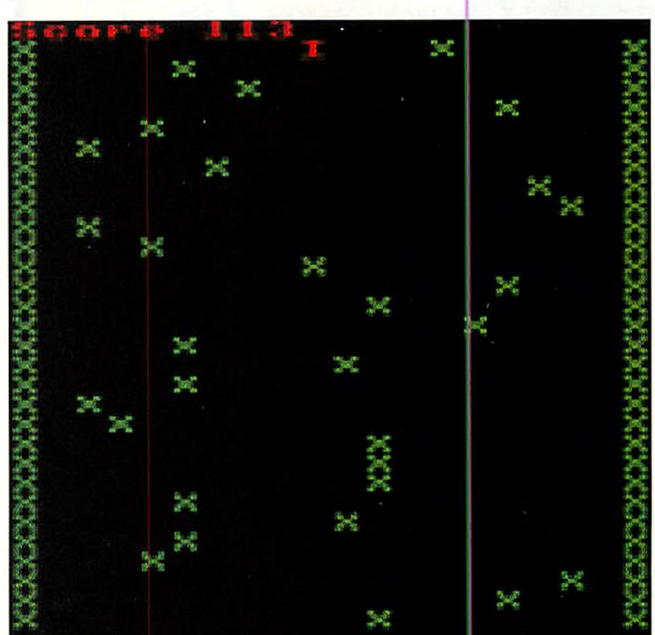
The Ski's the limit

Author: Roddy Graham

There is surely no limit to the fun you can have with this spectacular 32-bit version of the classic one-liner from Roddy Graham. Well, there may be a modest limit, but considering that *SkiDown* is just a single-line masterpiece, it provides pretty good value-for-bytes.

Use < and > to control your skier, avoiding the crosses or "croix des skis" as we skiing buffs call them.

Roddy promises to eat the hat of anyone who scores more than 1,500 – just send an authentic screen shot with hat and we promise to pass them on.

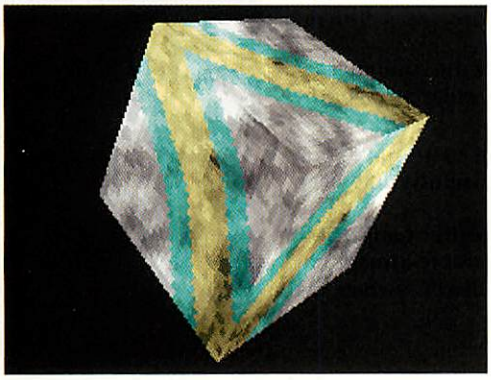


Cubism

Author: Andrew Docking

Andrew Docking follows on from his fixed Gouraud-shading demo (October 1996) with a fast and very effective demonstration of the art of texture mapping.

A simple cube with textured surfaces bounces to and fro delightfully. Andrew is apparently working on a game engine featuring texture-mapping and "all that kind of thing". We look forward to a demo...



For folk's sake

Author: Mr Adamson

Due to unfortunate technical error, our favourite music Master and supplier of MIDI tunes was inadvertently referred to as "old crotchet face" in the last issue. We would like to apologise sincerely for this slip in our standards and trust Mr A will find nothing offensive in this month's write up.

His latest batch of songs, as you might infer from the headline, have a folksy theme. They are *Lincolnshire Poacher, Michael Row the Boat* and *Rakes O'Mallow.*

Painless Reminder

Author: Ryan Hitch

Ryan Hitch confesses to being somewhat forgetful but fortunately remembered to post us this handy desktop utility.

"*Reminders* is a simple 'to do' list program. It sits invisibly in the top-right corner of the desktop. When the pointer is moved over this corner a window opens revealing the list.

"To edit the list, double-click in the top-right corner – this will load the list into *Edit* etc. Once the list has been updated, simply save it and close the window.

"I recommend loading *Reminders* as part of your boot-up, since it only takes up one page of memory. (If you're as forgetful as me and don't even remember it's there, you'll find that you sometimes open it accidentally.)

It occurred to us that it would be possible to add this sort of feature to *Director*. Ideally, notes would appear as a menu with a writable entry to allow a new note to be added. A submenu might provide options to delete a note, or mark it as urgent etc, using different colours to indicate different note types. If anyone would like to try their hand at writing this *Director* add-on we would be delighted to feature the result.

Hither and dither

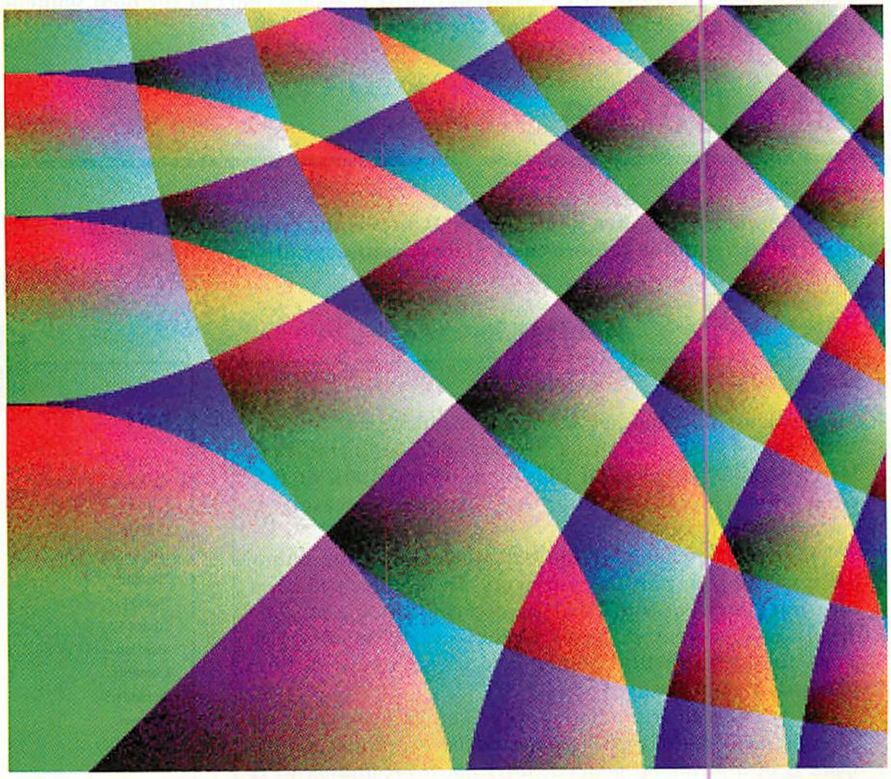
Author: Alistair Turnbull

The latest line in shading now. Alistair has been experimenting with dithering algorithm and concludes that random is best, illustrating the point with a nice demo...

"*Dither* is a random dithering algorithm. I strongly advocate using random dithering in place of the FS or patterned varieties because it's simpler, completely free of artifacts like jaggies and origin inconsistencies, scales to a lower resolution flawlessly, and survives the compound errors that transparency usually causes. It also looks nicer in my opinion. Acorn have rather scuppered themselves as regards the VDU drivers because they are still BBC compatible in many respects, and so the colour can be a dither pattern at best. I'll write some new ones at some point.

"It works by finding a good random dither pattern for colours on a 16x16x16 grid in the colour cube and then (randomly) interpolating these to make any other colours. The random number generator would give a number theorist a nervous breakdown, but it's perfectly good enough for this application.

"The random mixtures are good matches for the colours they are meant to represent, but they are more grainy than is absolutely necessary. I have been doing some maths to try to minimise the graininess and I've got some rather nice results, but no program as yet. A best mixture will use at most four colours. All other mixtures of the same four colours are best mixtures (these occupy a tetrahedron in the colour cube). The outsphere of the four colours of a best mixture does not enclose any other pure colours. So there. I can provide more details if anyone is interested (the author of the next version of *ColourTrans*?)."



Counter strike

Author: Matthew Somerville

In our February 1996 issue we carried a version of the computer board game *Reaction* which is one of the most popular progs of the year.

Matthew Someville has send us his version of the program which includes a computer player but most usefully has been 'downgraded' to run in Mode 28.

Matthew says that he spent a couple of hours with ChangeFSI to scale all the graphics to two-thirds of their size and re-arrange the icons to fit onto the smaller screen, so now non-RiscPC owners can play the game.

Okay, so you do need a multi-scan monitor . . .



In-font

Author: John Williams

John Williams of Birkenhead found Roberto Casula's Boot application very useful and decided to extend it by including his own customised system font.

"I find it useful to use an alternative screenfont – mine has an infant-style "a" and is clearer to read than the default. The problem with loading this from a boot file within the desktop is that you get a *'Press SPACE or click mouse to continue* message' thus halting your boot file temporarily. One answer is to load it in before entering the desktop.

"In Roberto's program, things in the *PreDesk* directory are either IconSprite'd, RMLoaded or if they are applications, Run, depending on their filetype. He uses "Repeat" to do the appropriate thing with each filetype throughout the *PreDesk* directory.

This is controlled from the *!RunCom* obey file within the *Boot* application. If the following three lines are added after the line UnAlias RDA then screenfont files ("BBCFonts", type &FF7) will be appropriately dealt with as well.

```
Alias LSF Echo ScrnFont: %%0|MPrint %%0|M
Repeat LSF <Boot$ToBeLoaded> -Type &FF7
UnAlias LSF
```

"Now your screenfont will be automatically loaded as part of the boot sequence without halting it." There is also a copy of John's very nice *Infant'a'* font on the cover disc.

Let's Dance

Author: Johnny Topper

Johnny Topper (a.k.a. Sheep) of Ingleton, Lancs is the creative force behind this dance track called *Dance*. It was written using Digital Symphony. More than that we cannot really say. Enjoy.

*QUIT

All programs, hints and tips, music and madness to:
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You needn't include a letter but **please put your name, address and program title on every disc** and include a text file containing your name, address, disc contents and program details. Saved screens, diagrams and other extras are most welcome and an SAE will ensure your discs are returned. *info submissions only please.

*Due to the popularity of *info we've had an extra couple of pages for the last two issues. Ideally we'd like to continue this but space is at a premium, however, after much negotiation we're pleased to announce that we've managed to wrestle one extra page. So from next issue we'll be bringing you a sustained 25% extra *info every month.*

Compatibility table

Program	RISC OS 2	RISC OS 3	RISC OS 3.5+
Infant'a	No	No	Yes
Lookout	No	Yes	Yes
Dither*	No	Yes	Yes
Drip Up	Yes	Yes	Yes
Jelly Snake	No	Yes	Yes
Plasland	No	Yes	Yes
SlickOil	Yes	Yes	Yes
Squint	No	No	Yes
Reaction	No	Yes	Yes
Elements	Yes	Yes	Yes
Reminders	Yes	Yes	Yes
Skidown	Yes	Yes	Yes
NewRMTidy	No	Yes	Yes
Text Cube	Yes	Yes	Yes
CloseUtil**	No	Yes	Yes
Russian***	No	No	No
NoCMOS	Yes	Yes	Yes

*Needs BasicLib ** Needs Director *** 6502 code

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Get a buzz from blind man's buff

Mike Cook develops a new 'feelgood' version of a traditional party game

It's Christmas – that means parties and parties mean party games. For those who never get invited to any here's a traditional game that can be played on your own – Blind Man's Buff.

The inspiration came from my son Alec. I told you last month how he was playing with a loudspeaker strapped to his back to get more immersion in games. I started thinking about other ways to get unconventional feedback from the computer. One idea was to use touch feedback, using buzzers – but what to tie it into? Then I remembered Blind Man's Buff, the traditional game using touch feedback, so why not combine the two? This month's project was conceived.

In many projects the software plays second fiddle to the hardware. This month the software is perhaps most important, so much so that you can nearly have as good a game with the software alone. Let's look at the hardware first. My idea was to fit four buzzers around the body and use them to generate a tingling feeling whenever the player touches anything in the game. I first needed to find a suitable buzzer. The Maplin catalogue came up trumps with a mechanical buzzer at less than a pound, catalogue number BZ57M.

Further examination revealed that it was an AC buzzer which was good. Normally buzzers are a bit like relays with the coil wired in series, with usually closed terminals. When current flows the relay closes. If the relay is closed the contacts are open so no current flows through the coil. Then the relay opens, closing the contacts thus causing current to flow in the coil again. This results in a clattering noise as the plate bangs against the coil's core. The downside is that the inductance in the coil causes the contacts to spark, generating interference that can crash the computer.

With an AC buzzer there are no contacts; the plate bangs against the core simply because the current is going on and off so there is no interference. My initial experiments with the buzzer were disappointing. I wired it up to a drive IC and fed a square wave – derived from a signal generator – into it. This allowed me to vary the frequency of switching the buzzer coil on and off. It was very sensitive to frequency and voltage – both had to be just right to buzz otherwise it wouldn't move or just continued latching up.

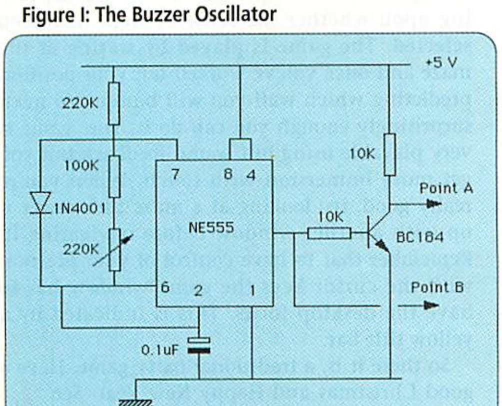
I worked out what was happening. The plate was becoming permanently magnetised and less inclined to spring away from the coil when the magnetic field was gone. I experimented with changing the shape of the driving signal so that it was only on for a short time and off for a long time but it wasn't much of an improvement. Then I realised that in the normal AC situation the magnetic field was being reversed every cycle and it was the reverse field, as well as the spring, that was pushing the plate away from the core and preventing it from latching up.

I had to design a driver circuit to reverse the direction of current flow in the coil instead of just turning it on and off. For simplicity I've divided it into two diagrams. Figure I shows the waveform generator using a simple NE555 timer and a transistor to generate complementary waveforms. The frequency of the signal can be changed by using the variable resistor to tune the buzzers for mechanical resonance and so maximise the buzz out.

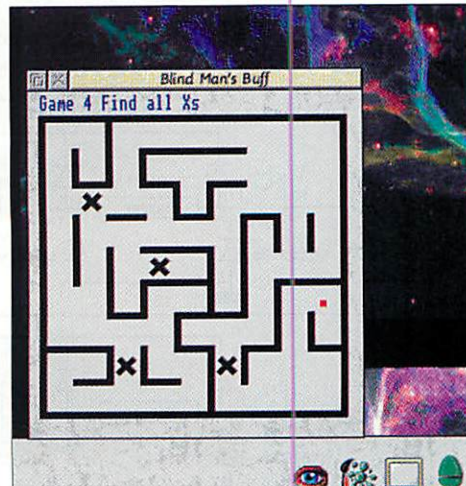
The driver circuit is shown in Figure II. This uses two LM18293 driver ICs which I've used many times in projects. Note that the driver parts of the chip, shown as triangles, and control part, shown as a rectangle, constitute one chip. So in Figure II there are only two ICs. They are fed with the complementary outputs of the oscillator so when one driver's output is high the other's is low. The high and low drivers swap over each cycle. The effect is that the buzzer coil is first being connected one way to the supply voltage and then the other way round.

Due to all the collapsing magnetic fields around coils there are

Figure I: The Buzzer Oscillator



In the fourth game you get to play in a maze



Get a buzz from blind man's buff

inevitable large 'back EMFs' generated. These can be several hundred volts in size but there isn't much power with them. Nevertheless there is enough to damage electronic components so these spikes are removed by two clamping diodes on each output. The first diode goes from the output to ground which shorts out any negative spikes. The second goes from the output to the 12 volt driver supply and catches any positive spikes. Note that you need two diodes on each output. These need to be rectifying diodes and not small signal diodes because of the currents involved.

The enable inputs on the driver chip allow easy control of the buzzers. These are wired up to the printer port or any other digital output if the software is changed. Putting a logic one on the output will cause it to buzz while a logic zero will stop it.

Now to fitting the buzzers on the body. I initially thought of placing them around my waist but I didn't have enough feeling there so I asked my wife Wendy if I could borrow her midriff, as the rolls of fat around mine might be making me insensitive. She said it was the most original chat up line she'd ever heard!

Mounting the buzzers in miniature boxes, also from Maplin, increased the vibrations plus they could be mounted on a belt or alternatively fitted to a headband. I found that my head is the most sensitive part of the body and although I feared the buzzing sensation might be too intense, if anything, it could have been stronger.

Four buzzers is not much of a project so I decided to design a game to go round it, using the touch sensors to help navigate around a maze in order to find objects. The program is on the cover disc. I built in six variants of the game – the full description of each can be found in its help file. A maze is displayed in a window and the aim is to find out where you are. When you think you know, click on that point and the computer indicates if the guess is correct.

Other variants involve tracking down treasures marked by Xs from a fixed or random starting position. The four cursor keys are used to move around and when you bump into a wall you feel the buzzers and hear a sound. The position of the buzz felt on the body and the type of sound heard indicates the position of the wall that has been bumped into. In the sense option of the game's menu there is a choice to get sight, sound or touch feedback. Sight feedback rather defeats the object but is good for testing the feel and speed of the movement of your position in relationship to the cursor keys.

The maze can be drawn in different sizes but I didn't want a traditional type of maze. With those, 'wall banging' can be used to 'navigate', by keeping a wall to the left to traverse the whole maze – the sort of maze normally generated by computers. I turned to a very old program I had written in the pre-Acorn days which was published in the April 1980 issue of *Practical Computing* for a TRS80 computer. I had to rewrite the code but the algorithm was very similar.

The maze is represented by nodes and each node can have a wall running off it in one of four directions. The maze is generated by taking a random walk through the nodes setting walls as you go. Trying to connect a node's wall to another node that already has a wall causes you to stop. In this way parts of the maze are never cut off and wall banging navigation does not work. There are some slight modifications to this, such as always having a wall starting from each of the bounding walls and stopping generating walls when failing to find a free node after a certain number of tries.

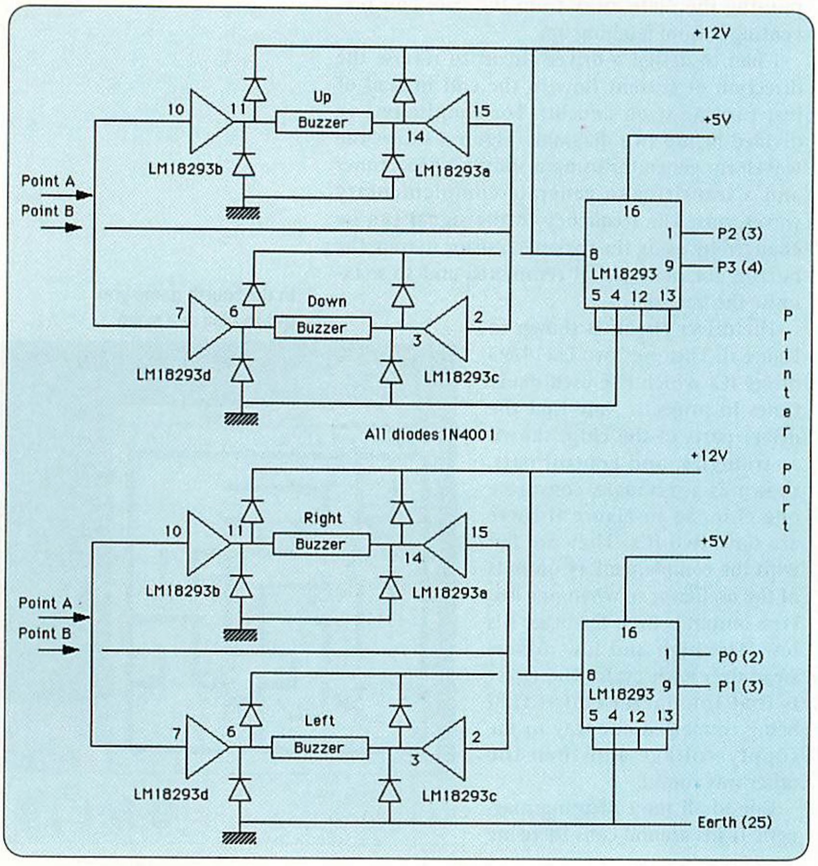
The most difficult part of the program was the collision detection. I had to detect the presence of a wall from the state of the nodes surrounding the current position. The simple way would be to use the graphics commands to see if a wall was present but that would mean the game would have to be played with its window unobstructed and in a certain screen mode.

As a final flurry I arranged the icon bar icon to change between an open and closed eye, depending upon whether the sense of sight had been selected. The game is played by staring at the maze and once you've worked out your position predicting which wall you will bump into next, surprisingly enough you can do it. The game is very playable using just sound feedback but you get more immersion with touch. When you're really good, try looking at a maze then cover it up with another window before navigating it. Remember that to have control of your position with the cursor keys the game window has to have the desktop focus. This is indicated by a yellow title bar.

So there it is, a traditional party game. Have a good Christmas and Happy New Year. See you in 1997.

AU

Figure II: The Buzzer Driver



Rambles through Acorn Wood

Another question and answers session with **Mike Cook**

The last month has been dominated by the arrival of the StrongARM card and finding out what does and doesn't work. It appears that things written in compiled C are among the likely candidates not to work. The combination of the new operating system and the StrongARM make opening large JPEG and photo CD images bearable.

It's amazing how quickly you get used to the speed of a machine. After a short time it doesn't appear fast it's just that all other computers seem suddenly slow. There's been one casualty – I've bent and broken a pin on the connector for the original card. I'll tell you next month if it has managed to survive the operation of fitting a new plug, I'm not looking forward to it.

A few months ago a paint file appeared on the cover disc which had some high quality replacements for many of the system icons. I liked these and decided to incorporate them into the start-up sequence. Unfortunately there were no instructions on how to use them so I had to find out.

All you do is place the file inside the !Boot.Choices.Boot.PreDesk directory. While this worked for most filetypes I found the paint and draw files were still the old type. I managed to track down the problem to several applications in the Utilities folder. On investigating the sprite files inside, some contained icons that matched the original default ones. There was no reason for this so I deleted the duplicates. Now I get the new icon set straight away when my machine is turned on.



Those readers who aren't Clan members won't know there has been a competition to design new icons. Some of the best entries have been posted on the Clan web site. Look out for these filtering down to other sites soon.

My son Alec has hit upon something else to do with computer discs – he calls it disc art. He uses the acrylic paints used for fantasy miniatures to paint designs on to black floppy discs. The results can be quite impressive but I don't know if I'd dare use them for fear of rubbing off the paint. Alec has put some disc art pictures on his home page http://www.zen.co.uk/home/page/alec.cook

I've had to move my web site, not very far just up a layer. My Acorn pages were inside the Physics directory so every time an Acorn page was accessed it logged and counted among the Physics pages. This tended to distort the hit count, or so the maths people said. If you're accessing from the old address it should work for a while but please change your bookmarks to http://physics.mmu.ac.uk/Acorn

Fortunately there is a software solution. If you are using a DOS version 6.0 or greater, the command 'memmaker" will free up some memory, enough for most purposes



On to the problems. John Berry from Wolverhampton has had some trouble with his RiscPC 486 card:

I have a RiscPC with 8Mb of main memory and 2Mb of video memory but never seem to be able to give the 486 card enough memory to play many games. I now have another 8Mb but still can't get enough memory despite the games saying they only require 4Mb.

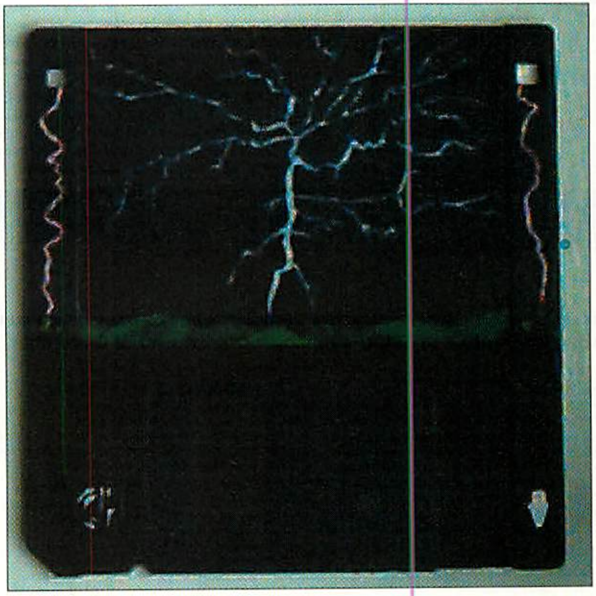
The problem is the really grotty way that the processor and DOS were designed back in the days when 640K was an infinite amount of memory. Early processors only had small address buses and so could not access much memory. Manufacturers developed all sorts of tricks to add more memory, known as extended memory.

Things settled down and now everyone adds extended memory in the same way. However, main memory – the original 640K – is still needed to load things like drivers and interrupt service routines and it is this that your games are complaining they can't get enough of.

Freeing up this memory is not a simple procedure as it involves relocating code to extended memory and writing small patches to it in main memory. Fortunately, there is a software solution. If you are using a DOS version 6.0 or greater, the command 'memmaker' will free up some memory, enough for most purposes.

There is also a piece of software costing about £40 that will free up even more. It's called QEMM from Quarterdeck and is advertised in most PC magazines. The funny thing is that PC users seem to accept this awful state of affairs as quite natural. Poor deluded souls.

Sean Bawden from Weston-super-Mare describes himself as a '15 year old A3010 user with no hard



drive' – well we all have to wait for full puberty. He writes with several questions:

I was looking into the possibility of buying one of the 'reduced in price' Syquest drives. According to the August 96 *Acorn User*, the RRP of these are just £89, so I looked through the adverts and couldn't find an external parallel port version. Do they exist? If so, where do I get one and do they simply plug into the parallel port or are there any hidden costs? I visited the Syquest web site and found only more drives that I didn't even know existed.

As far as I know the parallel port version of the Syquest drive is available from PC suppliers only. This is because in order to work a special software driver is required and, as far as I know, nobody has written one for our machines yet.

Secondly I have a Citizen 120D dot matrix printer which plugs into the parallel port. I do electronics as a hobby and was wondering if it is possible to make a cheap interface to plug into the RS232 port. I could then use the !Configure application, set the printer output to the serial port and all my problems would be solved.

Yes, in fact I have covered a serial to parallel project in my Body Building series in the old *Acorn Computing*. You want to see the BB 90 Feb 91 which is available to download from my web site. This will allow you to feed the parallel data inputs and strobe directly into your printer.

On a printer is a busy line that tells the computer to stop sending any more data. On a serial system this is usually done by dropping the CTS input on pin 8. Therefore you will have to make a little converter to change the TTL busy signal into an RS232 CTS signal.

Hopefully that might work. There is a chance that the computer might not be able to stop sending the data quickly enough. If this happens you might miss the odd character at the start of a line. There are commercial serial to parallel converters designed for printers that have small buffers in them to stop this sort of thing happening, but expect to pay about £40.

Finally, for my GCSE electronics I have to make a digital multi-meter to plug into a computer. I have a few ideas but my project doesn't seem to be going far and I was hoping you could give me a few helpful hints. Also could you help me to decide which port to use – parallel or RS232?

In the April 85 issue of *Micro User* I described a four and a half digit DVM which is the basis of a digital multi-meter. This is quite old and the software was written for a model B.

In the February 96 issue of *Acorn User* this was updated and I wrote some desktop software for the project. To turn it into a multi-meter, arrange some analogue switches or relays to change the input configuration. A low value resistor across the input changes it from measuring volts to measuring amps. If a small power source is connected to one end then the other end of the meter and power source become the terminals for measuring resistance. All that is required is a little application of ohms law to calibrate it.

John Bailey from Romford has been looking at some old articles on my web site and he is struck with a thought. He says:

I thought you might like to consider updating the Radius arm digitising tablet in BB 4 (June 83) which enabled you to trace round drawings and feed in the coordinates of an outline.

It used potentiometers and the analogue joystick to measure angles on a sort of pantograph arrangement. I have a few dead mice around so would it be possible to use the optical switch assembly to make a cheap very accurate digitising tablet?

There are two words in that request that are normally mutually exclusive – cheap and accurate – and this is no exception. With a radius arm digitising tablet accurate measurement of two angles is needed.

Using an 8-bit A/D converter to read 360 degrees gives an accuracy of just over one degree. To improve the accuracy an optical shaft encoder that gave a readout in excess of this would be required. These can be bought but they cost over £100 each.

The optical shaft encoder in a mouse would typically give about 20 pulses per revolution giving an accuracy of 18 degrees – not very accurate at all. Using gearing could improve on this but the gears would need to be mechanically very accurate and then there's the problem of backlash.

Sorry, but I think this one is a non-starter. If anyone is interested in the original design the A/D function of the old model B can be replaced by my IIC interface.

David Woodman from Stoke-on-Trent has been having some trouble with his ageing A310:

I use an Acorn Archimedes 310 computer upgraded with CJE Arm3, CJE 4 Megabytes RAM and RISC OS 3.10.

Installed in the above is a Conner hard disc connected via an ICS 'Idea' interface and IFEL multi-layer backplane. In the past I have very occasionally noticed that the hard disc has failed to read or write some file correctly but this occurred so rarely that I was not unduly alarmed. However over recent months hard disc errors have arisen with ever increasingly regularity. Sometimes the *Checkmap command would return with 'Bad free Space Map' and other times it would return with 'Map good'.

In the last few weeks errors have been so numerous that the auto-boot on the hard disc fails to work and just clicking on the hard disc icon results in the error 'Broken Directory'.

While the problem was developing I noticed that slowing the computer down (ie turning IDEFS Buffers off and turning the Arm3 Cache off) improved things. Also, swapping my newer Conner 210 megabyte drive for my older (and slower) Conner 80 megabyte drive seemed to offer some improvement. The problem worsened and now these measures, by themselves, have no effect.

I have now discovered that connecting the IDE interface directly to the motherboard and removing the IFEL backplane cures the problem completely (although when IDEFS buffers are enabled there are still occasional disc problems).

This led me to think that there might be something wrong with the backplane. I have already replaced the single IC it contains and tried the backplane with only the IDE interface connected, but to no avail.

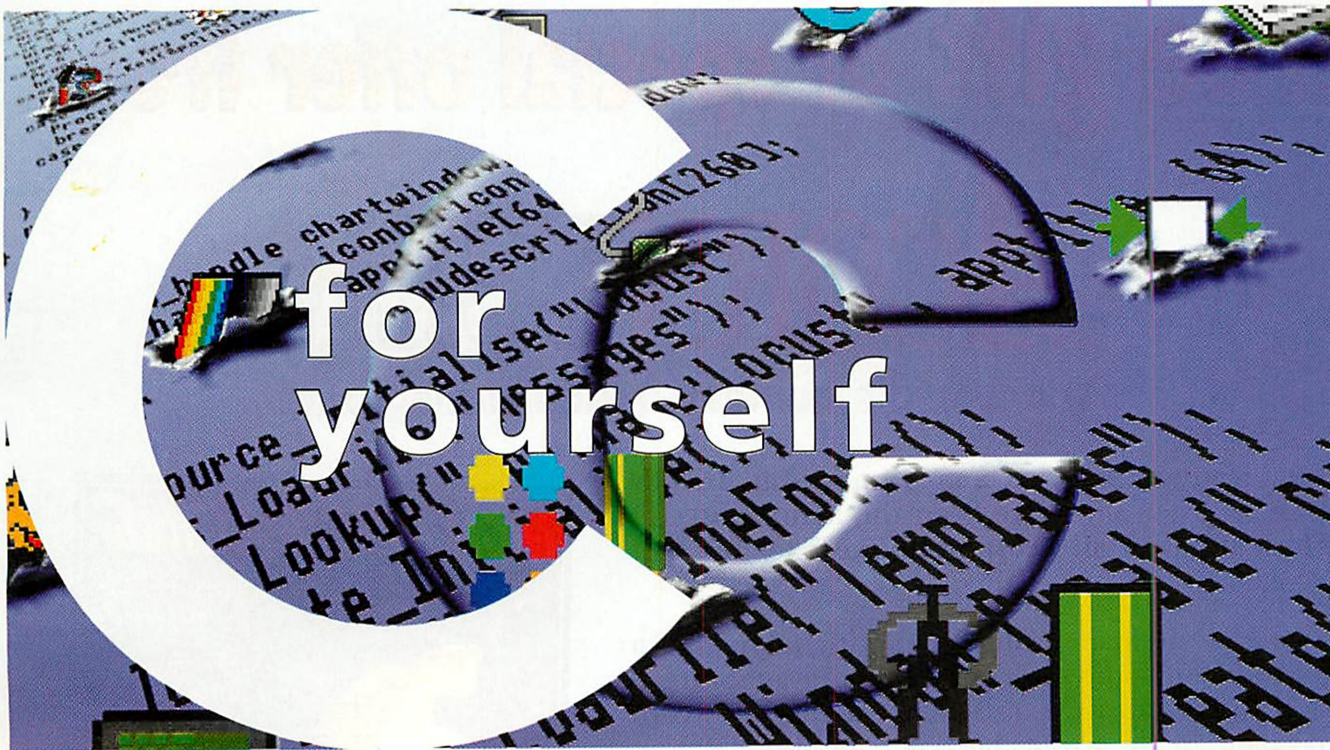
A visual inspection of the tracks and connectors on the backplane has revealed no obvious faults. The only things left are the decoupling capacitors (four electrolytic and one ceramic) but I have been told that they are most unlikely to be the cause of the problem.

If the fault does not lie with the back plane itself could you explain why removing it from the system seems to cure the problem?

Is it possible to suggest what might be causing the trouble? I am reasonably competent with a soldering iron and am aware of the need for static precautions when handling CMOS devices. In short I am keen to perform the surgery but first need a diagnosis!

I don't think your problem is in the backplane but it is probably making things worse. It sounds as if the extra load placed on the computer's bus by the backplane is making it fail. This is confirmed as matters were easier when the interface was plugged directly into the main board. All this points to the buffers on the main board that drive the backplane and the ROMs. From a look at the circuit diagram my first targets would be IC28, IC35 and IC36 – these are all 74HC573 buffer chips and it could be that they are losing some of their oomph. AU

C for yourself



JACK KREINDLER

Steve Mumford

discusses the decisions behind building a file format

Over the last month or so, we've built up the graphical routines necessary for informing the WIMP that we want to save a file – we've created save boxes and draggable icons and have a method of finding out where the user wants our program to dump the output. As a side effect, the loading of files can be accommodated fairly easily; the appropriate WIMP messages can be handled in the same routine that deals with the end-of-drag event.

Now comes the next big step – we have to decide what format we use for storing the data on disc. This is influenced heavily by the data formation used in the memory of the machine – some of the arguments used there will crop up again here.

You'll recall that we used a linked list of structures to hold the bulk of the program's data – this gave us flexibility in many ways, including the fact that we were effectively only limited by the amount of memory in the machine. We've already seen that with this feature comes a price – a lot more housekeeping is required when compared to using an array of predetermined size. I made some compromises by making the fields within the structure a fixed length; although in some ways prohibitive, this made the creation of the structures and their memory allocation much easier to handle.

One of the first things we have to build into our file is a simple data header – at the very least there should be a string of bytes in there identifying the nature of the file. Of course, you can use Acorn's filetype system to go some way towards automating this, but it makes sense to put in a safety check.

It's also a good idea to include the version number of the program that created the file, so if you update your masterpiece to such an extent that file formats are no longer compatible you'll need to be able to sieve out and deal with older files. That might be all the header contains, but in our situation we'll be including some extra information such as the number of records in the file and a vague indication of where they appear.

Several factors work against each other in this decision – the first is ease of programming, the second is speed of operation and the third is efficiency. Now that memory's pretty cheap and hard discs are two a penny, the third member of the list isn't so important, but it's still worth bearing in mind. You will be able to appreciate how much easier it is to dump a structure out to disc as a block of memory, rather than wading through each of the structures and saving out every field by hand.

Ease of programming is one thing, but if you ever have to write a database application that must deal with particularly large datasets, it's vital to consider the impact those might have on the algorithms you use. Plenty of situations can require the manipulation of gigabytes of data; logging the demands placed upon a Web server can easily produce this amount. When the volume of information on disc can exceed the physical RAM capacities of the machine, you have to start planning your file format very carefully, building it in a way so that it's easy to read and write to on the fly.

Searching is an important aspect as you don't really want to have to wade through two gigabytes of data every time you want to find a particular record. There are well-documented techniques of coping with these situations – for instance, hashing tables can be used to store a record within a file at a position that can be determined by the contents of that record.

Fortunately, the subject matter of our database doesn't really require that sort of extreme treatment. Although I aim to mention more of those techniques later, I don't intend to implement them here and now. We'll deal with the manipulation of data entirely in memory and save the file as a number of blocks of raw data, this figure being entered in the file header to simplify reloading.

• *It's been a long haul up to the program's present state, so for a change, next month, I'll look at a few of the more common functions that programmers find themselves having to develop, such as sorting and indexing routines. I'll try to describe the principles behind some of them and provide implementations to add to the* Acorn User *library.* AU

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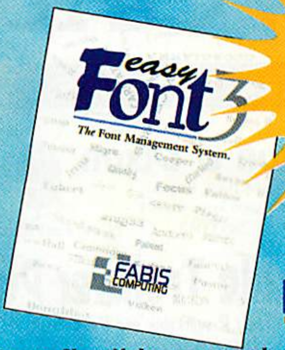


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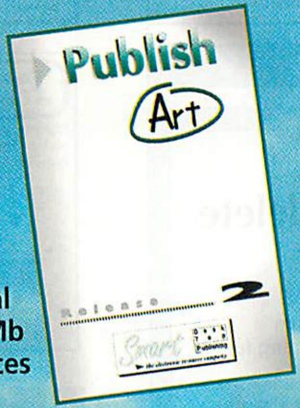
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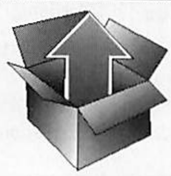
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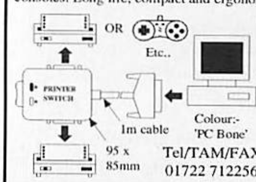
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letters



Network Computers and the Internet

I am a first year Maths and Computer Science student at Leicester University. As you would expect, I have been using computers quite a lot, and given that I have free Internet access, it is hardly surprising that I take advantage of it.

The university, unfortunately, does not use any Acorn machines. This is not really all that surprising but it is quite annoying for me to be using computers which are slow, unreliable and difficult to use, compared to my own.

One redeeming feature though is that the Ethernet service is very fast. When using the Internet this may seem like a godsend, as a lot of people who have modem to POP links will tell you just how slow things can get. The speed increase is not as dramatic as one might expect.

The bottleneck of information doesn't happen at the link between the user and the Internet provider.

Although the Internet computers are linked using very high speed connections, this speed is shared between hundreds, or even thousands of users.

Having a 2Mb/s link to the Internet is overkill to be honest. The speed rarely gets above 1/10th of this.

What has this got to do with Acorn? Well, initially not a lot. But, if you look at the number of new users the NetStation will bring, you have a serious situation on your hands.

The capacity to accommodate the number of potential users isn't there, and the Internet will become even slower.

I hope there are some Internet providers reading this and that they take note. People will eventually get digital phone lines as standard and the need for fast interconnections will become increasingly important. I hope you plan for the future and increase the capacity of your lines, before it is too late.

Alistair Archer, ara5@leicester.ac.uk

The Internet Service Providers are well aware of the coming problem and as their income increases (with new subscribers) they will be improving the bandwidth of their systems, eventually evolving into the broadband network that will be needed for interactive TV.

Excellent service

I've had to write to tell you about the excellent service I have received from Xemplar Education. I am a teacher in York and recently made some enquiries about the StrongARM chip.

I had instant replies to all my e-mails, telephone calls at school to check I knew what I was doing (no number was given just an address) and the sort of service that made me think I was dealing with a well organised company. Well done Acorn. The future's bright – the future's Acorn!

Clint Lees, clintlees@nature.demon.co.uk

More power!

I am one of those fortunate enough to have a one of those new fangled StrongARM thingies and all I can say is wow! It flies! It's amazing! What many reviewers have not taken into account, when comparing with the RPC700 saying that StrongArm is about 700 per cent faster, is that most people have no idea how fast that really is when compared with the machine they own. It's staggering.

After using my StrongARM for two weeks I got impatient waiting for my son's A440 ARM3 to do its stuff. My daughter owns an A3010 and I found this totally unusable.

I wrote a small program below to compare the speed. It does nothing useful but illustrates clearly the difference I was noticing.

```
TIME=0
b=1
FOR a=1 TO 1000000
b=b+1
c=a*b
NEXT a
PRINT TIME
PRINT c
```

On a StrongARM it executes in 3.09 seconds — not



really long enough to notice. How long do you think such a program would take on a A3010? 30 seconds? A minute? It took 236 seconds, just four seconds short of four minutes which is a factor of 76.4.

The ARM3 machine performed far better than I expected after the first test – a mere 43.2 seconds, a factor of 14.

This would indicate the StrongARM is about 100 times faster or 10000% faster than the original Arm 2 machines.

There is only one conclusion: forget the new car, forget the new three-piece suite, forget the Christmas presents, you need a new StrongARM Risc PC.

Jon Scott,
J.C.Scott@open.ac.uk

While comparisons such as these are exciting, they are also misleading.

A short Basic program will be executed almost entirely from the StrongARM's cache and so runs much faster than a 'normal' application.

Having said that, just stick to the 7x speed increase, that's quite enough for anyone, for the time being.

Error 404 — page not found

In the December issue you mentioned that BBC Application Notes are available from the Acorn web site — but you quoted the old URL.

The application notes are now in the Sales and Support section of the ART web site:

http://www.art.acorn.co.uk/SALES/

It's not that serious as the Not Found page contains a link to the Search Engine that will easily find the page you want.

Some further big changes are currently being thought about for the whole Acorn site. Anyway, keep up the good work.

Joe Oldak, Webmaster for the Acorn Computer Group
http://www.acorn.co.uk/~joldak/

Network computers

I enjoyed your Editor's letter (August) and tend to agree with some of your concerns. However, I believe the NC will be a success.

From my perspective from a major IT company, it is clear that the NC on company intranets will be a powerful tool and in the domestic (retail area) the major telecoms are queueing to supply these machines.

It is reasonable to assume they will rapidly increase the bandwidth and remove network bottle-necks as the demand is increased.

There are already examples of WebTV available from the Cybervillage site which look very good and all the cable companies will join the bandwagon because of the many benefits they can take, if their subscribers have an NC/STB box in their home.

Pay as you view TV becomes more acceptable with the smart card holding the credits to watch, and all sorts of other services will be available – subscription to a games channel, accounts, spreadsheets and so on will all be possible.

My real concern at present is the lack of Java or Java tools on the Acorn platform. ANT Ltd are building Java into the NC browser as part of that contract, but won't discuss if/when it will find its way into Fresco. In October Corel is releasing a beta version of the 'perfect office' suite written in Java (Word Perfect Quatro Pro and Paradox).

This means that anyone with a Java enabled browser can run these products. This would of course make Acorn hardware 100 per cent compatible with industry standard software. But why are there no initiatives visible and the work sub contracted out?

Microsoft officially now recognises the NC as a threat to areas of its business and is addressing this by making the cost of ownership lower (not price) of the PC.

Microsoft has split its business into three areas: Power/Workstation users, General desktop and Mobile and only see group two as threatened by the NC. I think they are wrong because the application of the ARM-7500FE and StrongARM architectures make computing far more mobile than an Intel chip ever can.

The recent announcements about speech recognition with Motorola will change mobile phones dramatically and add real credence to Psion's claims to deliver a Palmtop machine with speech recognition soon.

RISC OS needs Java, it will remove the only real hurdle to its serious adoption as a desktop system.

If Acorn built a Java virtual machine into RISC OS and had direct calls to the GUI objects it would potentially out-perform PC browser solutions running the same software supporting the whole NC initiative.

Intel may also go for an NC machine. There are some interesting statements now coming from Oracle, and it is difficult to tell if it is simply avoiding negative press from Wintel or there genuinely will be an Intel-based NC.

Roland Major, Roland.Major@dial.pipex.com

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The Regan files

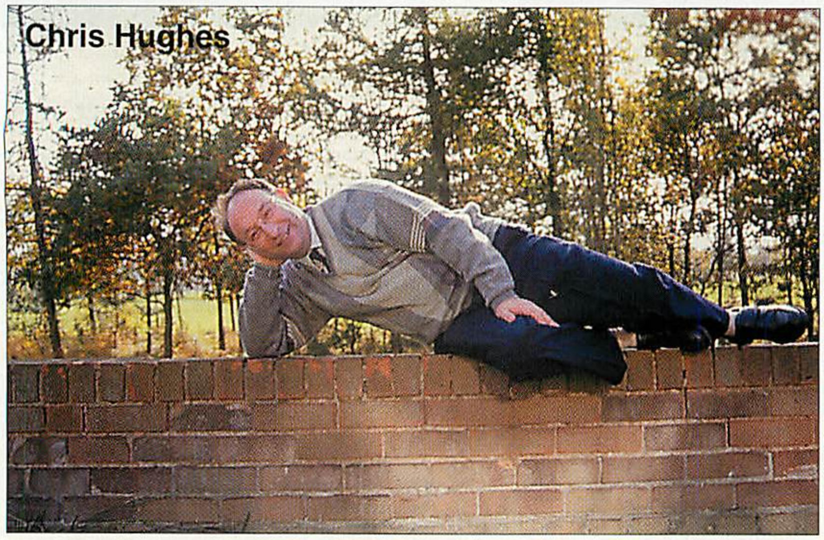
> If they want a group they have to go out and make things happen. Life does not provide you with everything on a plate

Most Acorn users outside Wakefield probably hadn't heard of Chris Hughes before last May. The secretary of WACG (Wakefield Acorn Computer Group) was well known as a keen Acorn advocate on Usenet, but people who weren't Net-connected had yet to 'discover' him. All that changed with the Wakefield Acorn Computer Group Show, which was part-organised by Chris and was – with all due respect to an excellent Acorn World – the best Acorn show this year.

'We started the ball rolling in mid-February after Chris Cox had been to give our group a talk and said it sounded like a good idea,' Chris explains. 'A week later we banged out loads of e-mail and within one and a half hours we had the first people wanting to come. Our financial planning was to make the show as cheap as possible so there would not be any pressure on the exhibitors to "sell sell sell" in order to recoup the costs.

'At the same time we wanted to cover our basic costs by the charge to the exhibitors, which was done by finding a reasonably-priced venue. We required 20 exhibitors to start to cover costs; by the middle of the first week we had 30 definites, so we were sailing.'

Chris puts the success of the show down to planning and because the organisers (all Acorn enthusiasts) had been to many shows and knew what they did *not* want. Although the chief motivation was to provide something interesting for the WACG on their own doorstep, they did in fact make a profit from the ticket sales, which was ploughed back into the WACG funds for more equipment.


Chris Hughes

This is all the more amazing when you consider that organising the show was a spare-time activity; Chris's day job is organising IT for the waste disposal sites in West Yorkshire. He maintains software and the networks on these sites – the last nightmare for him to sort out was the land fill tax which anyone who wants to dump has to pay.

Chris first really got into computing when he was at college doing a Business and Finance HNC. He had taken a course in computingprior to this and the tutor recommended a BBC B and the rest was natural progression. After seeing a meeting for the WACG advertised in the local library, he went along. A year later he joined, he was persuaded to sit on the committee and six months later became secretary.

'When I took over as secretary we had forty pounds in the kitty; barely enough to pay for the room where we meet. I was determined to make the group work and we are now one of the most high profile. We are not as commercial as The ARM Club – and do not have nearly as many members – but we do provide a friendly service.'

One the lifelines of the club is the regular auctions of Acorn equipment and other assorted items. It's amazing what people will pay good money for to help the Club; in one auction a banana was put up for sale and bought for five pounds. Later, the buyer returned with the banana skin which was sold for two pounds. Not bad, considering wear and tear on the product through everyday use.

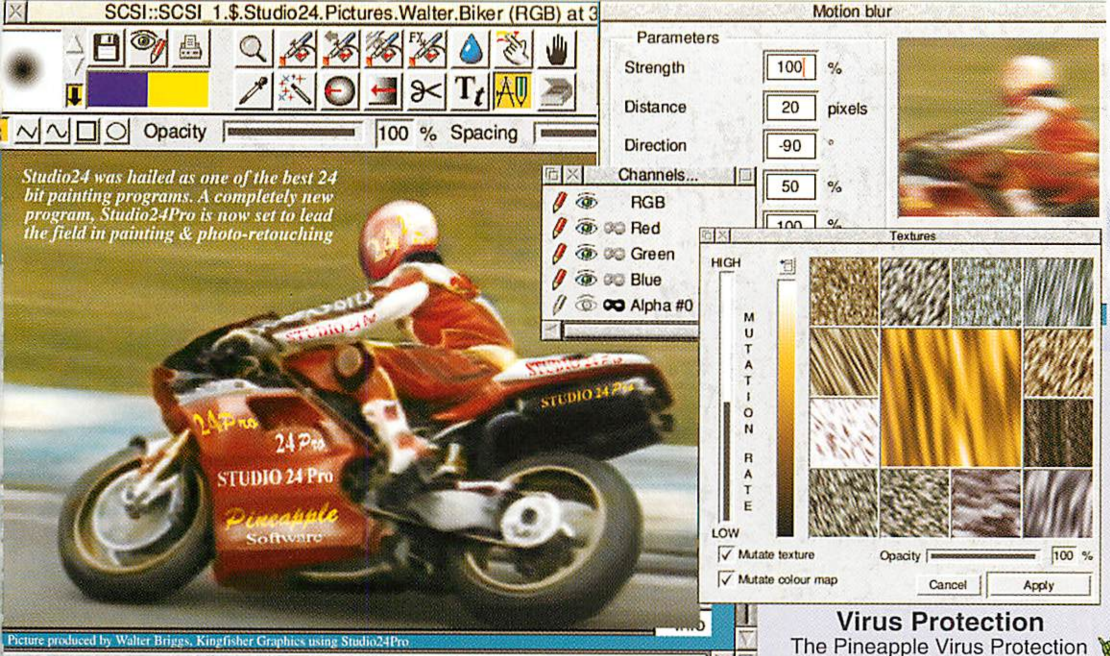
The group is highly active and holds regular meetings, at which big names in the Acorn market show off the latest development. Reports of one of the most recent, with Peter Bondar showing off a supercharged StrongARM with the aid of some freeze-spray, prompted many people to envy Wakefield and its user group.

'Our members are not just from Wakefield; we do have people who come as far afield as Newcastle, Liverpool and Wales to meetings. It amused me to see that people were demanding to know why there were no similar groups near them. If they want a group they have to go out and make things happen. Life does not provide you with everything on a plate.'

Indeed it does not. Perhaps this message has a particular significance for Chris; he was born with two holes in his heart and blind. His heart stopped for three minutes, this gave him slight brain damage and causing him to be hard of hearing. He was the first person in the world to survive a hole in the heart operation (at the age of three) and does now have sight in one eye thanks to further surgery.

None of this slows Chris down in the slightest. Plans for next year's (two day) Wakefield show are well advanced and they, and the WACG, couldn't be in safer hands.

Jill Regan AU



Picture produced by Walter Briggs, Kingfisher Graphics using Studio24Pro

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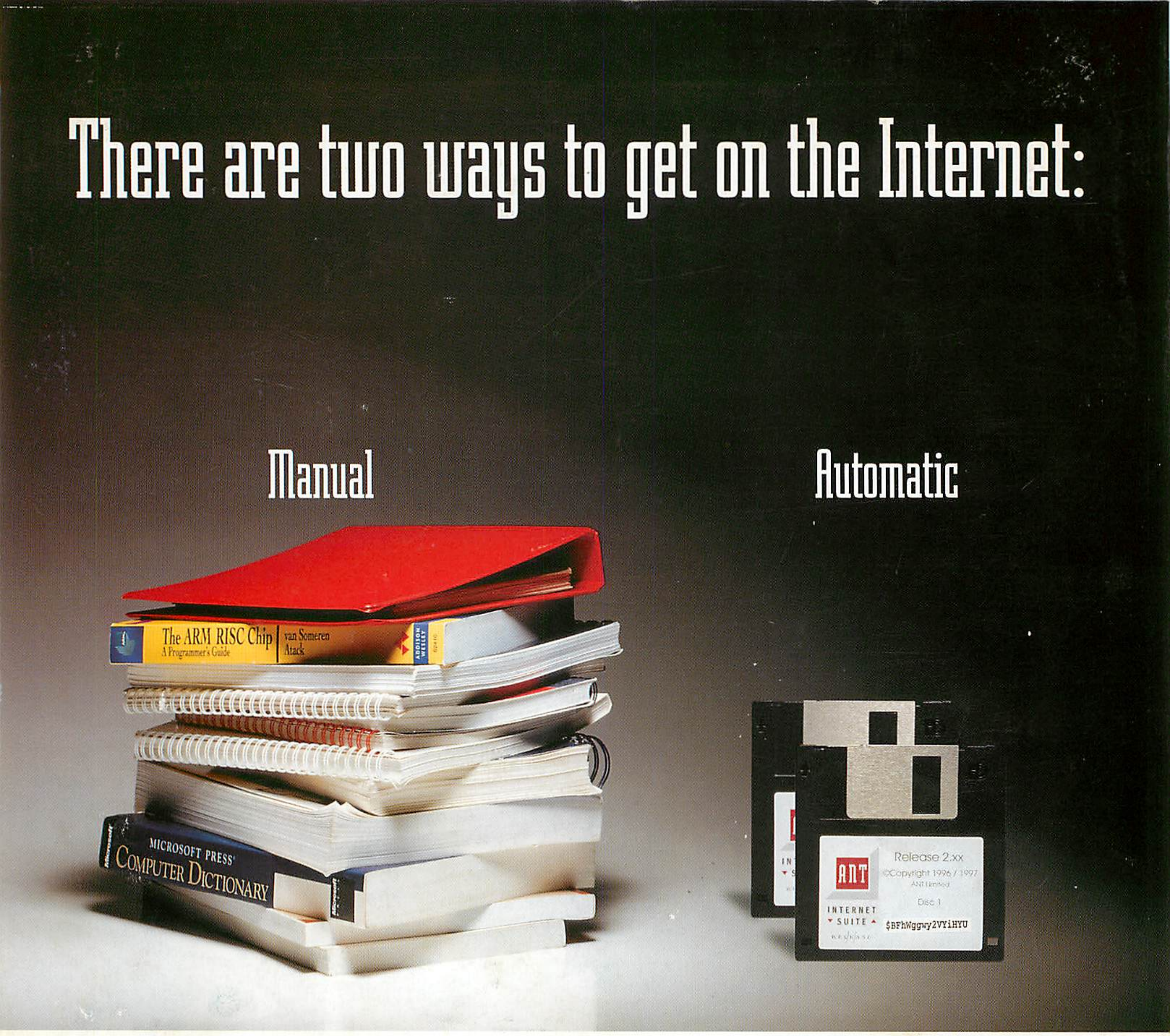
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